





#### THE

## ENTOMOLOGIST'S MONTHLY MAGAZINE:

CONDUCTED BY

H. G. KNAGGS, M.D., F.L.S. E. C. RYE.

R. McLACHLAN, F.L.S.

H. T. STAINTON, F.R.S.

#### VOL. V.

"We must take species separately, and study the nature of each." ARISTOTLE, on Animals, Book I, chap. vii.



248841

LONDON .

JOHN VAN VOORST, 1, PATERNOSTER

LONDON:

PRINTED BY A. NAPIER, SEYMOUR STREET, EUSTON SQUARE.

595.70542 E62 INS.

#### PREFACE.

C. V. RILEY, Washington, D. C.

At the conclusion of the fifth volume, we beg to express our thanks to our supporters, to whom is due the steadily increasing usefulness of the Magazine; hoping also that the termination of a second lustrum will find us enjoying then, as now, the same amicable relations with them, and the same unity of purpose amongst ourselves; with the satisfaction of knowing that, in having constantly held in view the advancement of Entomology, we have maintained an independence of party feeling, the entertainment of which, even in the slightest degree, is fatal to scientific progress, and a thing to be eschewed by all true naturalists.

We regret exceedingly that for many numbers of this volume we were unable, through extreme pressure, to give prompt attention to many important communications, and this notwithstanding the issue of several enlarged numbers: our correspondents will please bear in mind that our constant aim is to clear off accumulations of materials as soon as possible.

In answer to enquiries as to the financial condition of the undertaking, we simply say that experience seems to prove that each volume recoups its expenses (and nearly exhausts our present limited impression) in about four years, a result we had scarcely hoped for at our commencement, and which gives an additional guarantee for a long existence.

We have felt, with our supporters, some slight inconvenience from the fact of our year commencing in June instead of January, and would gladly obviate this, but the large number of subscribers in advance renders it now almost impossible to make a new arrangement, and we must therefore ask our friends to bear with us in this respect.

<sup>1,</sup> Paternoster Row: 30th April, 1869.

#### PREFACE.

It the conducted of the A'd volume, we have a express one than to our engagement, to whom in doe vise stoods in incompagement to our engagement, to whom in doe vise the terminalism of a mount of the fall in our enjaying them, on now, the constraint our enjaying them, and the constraint of particles and the state of the fall in the state of the constraint of the constrai

and the state of the second control of the state of the s

In army to enquiries as to the frontial to the will be well as all a control of the control of t

We have the first with an engeneer concellable insurence or field insurence or field insurence or field insurence or field the first state of a large transfer of the first state of a large transfer of a concern transfer of the first state of a large transfer or the first state of a large transfer or the first state of the first state

#### INDEX.

#### INDEX TO GENERAL SUBJECTS.

PAGE

A further reply to Mr. Dunning's remarks on the gender of Acanthosoma, &c.							
A rejoinder to the Rev. T. A. Marshall's reply on the gender of Acanthosoma							
A reply to Mr. Dunning's remarks on the gender of Acanthosoma							
Abbotia, Note on the genus, of Leach	j						
Abraxas grossulariata, Superabundance of	9						
" the larva of, distasteful to frogs 131							
Abundance of certain insects in certain years, On the	8						
" " Colias Hyale in 1868	į						
" Sphingidæ in Japan during the past summer, Note on 173	,						
" Sphinx convolvuli near Exeter	,						
" the larvæ of Melitæa Cinxia							
Abuses in Nomenclature	,						
Acanthosoma hæmorrhoidalis or hæmorrhoidale?, with a word or two on the							
perpetuation of blunders in nomenclature							
Acanthosoma; the beginning of the end							
Acherontia Atropos at Dumfries, Occurrence of							
,, ,, Folkestone							
" " " Margate							
,, Capture of, on the wing	į						
Acidalia, Notes on the genus, with description of the larva of A. holosericata 95	,						
" emutaria at King's Lynn							
" holosericata, Description of the larva of 95	,						
Acontia luctuosa, Notes on the earlier stages of							
Acronycta alni, &c., in Sussex							
" " near Manchester	,						
,, Note on							
" On the natural history of							
Addition of eight species of Coleoptera to the British List 100							
" to the list of British Trichoptera (Agrypnia picta, Kolen.) . 125							
Additions, Note on four, to the list of British Coleoptera 196							
,, Two, to the British Trichoptera							
Agabus affinis, Payk., Note on							
Agrotera nemoralis, Capture of							
Agrotis cinerea at Folkestone							
Agrypnia picta, Kolenati, Note on							
Amphydasis betularia, Note on variation in							
Analytical view of the Lepidopterous Fauna of Haslemere and its vicinity 211							
Aphodius nemoralis and A. constans, Note on							
" porcus, a cuckoo parasite on Geotrupes stercorarius 273							

	PAGI
Aphodius villosus, Capture of	4.
Apion cerdo, Occurrence in Britain of	124
" " of, near Newcastle-on-Tyne	142
" scrobicolle, Gyll., Note on	276
Argynnis Euphrosyne, Notes on the earlier stages of	. 125
" Lathonia at Colchester	06, 131
" " " Folkestone, Occurrence of	. 130
	05, 171
,, Ramsgate	. 106
Atomaria ferruginea and A. fimetarii in Yorkshire, Capture of	148
Attagenus megatoma, Fab., Occurrence of, in London	. 101
Avagenus megavoma, Fab., Occurrence of, in London	. 101
District the second sec	0.00
Balaninus cerasorum and B. rubidus, Note on	218
Bedeguar galls, Query respecting	. 148
Bibio, Description of a new species of	268
Birch-Wood Dinner	. 51
Blunders in nomenclature, A word or two on the perpetuation of	181
Botys asinalis, Abundance of the larvæ of, at Bishopstowe	. 208
Brazilian insects	51
British Coleoptera, Notes on (Motschulskian)	. 197
" Gyrinidæ, On the	52
" Halticidæ, Notes on the	. 163
	59, 293
" species of Malthodes, Notes on the	. 18
	291
	. 7
,, Syrphi, Notes on some	
Bruchus pisi, Note on .	20
"Bullettino della Società Entomologica Italiana;" anno primo: Review	. 285
Cæcilius atricornis, A new species of Psocidæ inhabiting Britain, Description of	f 196
Captures at Colchester, Early Lepidopterous	23
, of Coleoptera during the past season	. 219
,, near Manchester	200
, of Lepidoptera at Howth	. 78
,, ,, Taplow	224
" " Witherslack	. 49
,, in various localities in March, April, and May .	49
near Perth in 1868	. 224
0 7 17	104
1000	
, Neuroptera and Trichoptera	147
	125
"Catalogue of the Insects of Northumberland and Durham; Aculeate	
Hymenoptera.": Review	301
"Catalogus Colcopterorum," Tom. ii., Notes upon Gemminger & Von Harold's	
"Catalogus Hymenopterorum Europæ," auctore L. Kirchner: Review	153
Cathormiocerus socius, a true British species	68

			iii.
			PAGE
Catocala fraxini and other rarities in Cheshire, Occurrence of .	•		. 128
" at Ipswich	•	•	. 173
,, ,, near Manchester	. '	'	220
Cecidomyia, On the spinning of the larva of a	٠.	•	4 131
Cerostoma scabrella near Croydon			45
Charæas graminis, Note on the larva of	٠.	·	. 225
Cheiropachus quadrum, Note on the pairing of			297
Chœrocampa Celerio at Birmingham.			172
" " Huddersfield			150
,, near York		,	. 173
,, Elpenor, Query concerning	٠, ا		108
, nerii at St. Leonards	٠.		. 172
,, porcellus near Tynemouth			72
Chrosis euphorbiana bred			. 106
Chrysopa tenella, Schneider, Note on British examples of		٠	251
Cicindelidæ from tropical America, with descriptions of four new	spec	eies	8
(Gen. Odontocheila and Pseudoxycheila)			297
Cilix spinula and Notodonta trepida in Kircudbrightshire			. 299
Clytus arietis, Live, in Museums			123
Coccinella labilis, Re-occurrence of			. 45
Coccyx hyrciniana, Habits of		•	206
Coleoptera &c., near Putney, Further notes on			. 45
Colias Edusa, Note on	•	•	77
" Hyale, Abundance of, in 1868		. 1	06, 130
,, and Argynnis Lathonia at Colchester	•	۰	106
" and Sphinx convolvuli at Haslemere			. 130
" in 1868, Notes respecting the abundance of	•	٠	253
" " near Birmingham			. 107
" " " London		•	205
, " " Ramsgate	•		. 107
", "Observations on the occurrence of, in Britain .	•	•	. 48
Collecting in Burnt and Bishop's Woods in Staffordshire, Notes on Sherwood Forest, Results of a day and a night's.			79
75 77 77 77 77 77 77 77 77 77 77 77 77 7	lars	tate	
" Management, &c., Notes on (Lepidoptera): The Caterpii Colletes cunicularia, L., Discovery of a new British Bee		-	276
Collix sparsata, &c., near York	٠.	•	. 77
Cosmia pyralina in Suffolk			23
Crambus rorellus at Folkestone			. 150
Crœsus septentrionalis, Note on			21
Cryphalus binodulus and Hylurgus pilosus, Notes on			. 198
Ctenicerus pectinicornis and C. cupreus, Habitats of			276
Curious capture of Lucanus			. 124
, locality for Ischnomera melanura			20
Currant-gall on Salix herbacea, Note on the			. 21
Curtis's. The late John. Entomological Drawings			209

Curtis's, The late John, Entomological Drawings .

c ·	D:	0 1		P	AGE
Cynips,		of a male	•	•	298
,,	-	Economic use for the galls of			171
Cynthia	cardui, A	bundance of	•		205
23	23	Curious variety of the larva of			278
33	29	Extraordinary variety of	•		229
		inea, Notes on the earlier stages of		•	206
Death o	of Charles	Turner	•	٠	25
33	Thomas	Desvignes, Esq			25
Deaths	of Foreign	Entomologists			26
Deileph	ila lineata,	, Acronycta alni, &c., in Sussex			107
23	29	at Guestling			106
,,	29	" Marlborough			128
,,	"	" Newport, I.W			129
22	**	" Torquay			104
22	23	in Derbyshire			130
	"	"Kildare		105	
"	-	, Scotland			172
39	33		•	•	105
Deleast	n diabasas			•	0, 21
Deleast		* *	•	2	
33	,,	in Scotland		•	142
-		llector to Ecuador and Bolivia	•	•	25
-	-	opinquella and rhodochrella, Note on		•	105
		new species of West African Papilio, hitherto consid	ere	CÎ.	
		Zenobia of Fabricius	•	•	60
0		s, Esq., Death of		•	25
Desvign	es's Collec	etion of Ichneumonidæ, The late Mr			51
Diantho	ecia Barre	tii, Capture of			47
33	cæsia,	Capture of			47
33	capsop	hila bred			24
22	irregu	laris Hufn. (echii, Bork), Capture of, in Britain .			220
Dicrora	mpha flavi	dorsana, Knaggs, near Exeter, Occurrence of			128
	-	e of thorax in sexes of Hydroporus elegans, &c.			169
Dilar, (	n a neuro	pterous insect from N.W. India belonging to the gen	us		239
Dipter	us larvæ v	roided by the human subject			144
-		a and D. lævicollis of Thomson, Note on the			218
	-	hot seasons, Note on			107
		us in Ireland	٠	•	141
Dynsci	is imppoint	as in a country of the country of th		•	141
Early a	nd late ap	pearance of Lepidoptera			48
Early a	ppearance	of Eupitheciæ			280
,, a	ppearances	s—Saturnia carpini—Smerinthus tiliæ			24
,, I	epidopter	ous captures at Colchester			23
		ology, French exhibition of			50
10		the galls of Cynips lignicola			171
Elachis	ta paludur	., , , , ,			78
	-	British Lists Occurrence in Morarchire of an			193

	PA	GE
Enoicyla pusilla, the terrestrial Trichopterous insect, bred in England .		43
, Further note on	1	70
Entomological Society of London, Proceedings of 26, 51, 80, 180, 210 258, 28	), 2 5, 3	238 301
Ephemeridæ, An outline of a re-arrangement of the genera of		82
Epuræa, Habitat of	1	169
Euperia fulvago in Scotland, Occurrence of	1	31
Eupithecia consignata bred in Belgium	1	107
Description of the larva of		72
" Note on the pupa of		73
, irriguata, &c., at Glanville's Wootton	8	205
Eupitheciæ, Early appearance of	2	280
" taken in Derby and the neighbourhood, List of: with notes .		22
Eupœcilia, Notes on some British species of	2	244
European species of Syrphus allied to S. ribesii	. 1	190
Euthemonia russula, Abnormal brood of	1	131
"Faune Entomologique Française, Lepidopterès," par M. E. Berce; Review .		49
Fecundity of the Queen Bee, On the		71
Fidonia pinetaria, Hub. (brunneata, Steph.), Description of the larva of	. 1	108
Fir-feeding Lepidoptera, Notes on the larvæ of some	1	178
Formica nigra, An early swarm of	2	298
French Exhibition of Economic Entomology		50
Further notes on Coleoptera, &c., near Putney		45
, , , , , , , , , , , , , , , , , , , ,		
Gall-bearing British Plants, A list of		118
,, ,, Plants, Second list of		216
Gall Insects, Notes on.		132
Galls of Cynips lignicola, Economic use for the		171
General Information	25	, 50
Geotrupes stercorarius, Aphodius porcus, a cuckoo parasite on		273
Glaciers, Insects found on		170
Grapta C-album in Devonshire		147
Gyrinidæ, On the British		52
Gyrinus æneus, Steph., On		217
Habits and transformations of Hylesinus crenatus, H. fraxini, and H. vittatus	,	
Observations on the		120
, of Hylesinus, Note on the		20
" " Saturnia carpini in Orkney, Note on the		49
Hadena atriplicis, &c., Note on		79
" peregrina at Lewes		150
Halticidæ, Notes on the British	٠	163
Heliophobus popularis, Charæas graminis and Luperina cespitis, Note on the		
larvæ of		
Heliothis peltigera at Exeter		130

	PAGE
prompt of the control	59, 293
" in Palestine and Syria, List of captures of: together with de-	
scriptions of several new species	·
Hepialus hectus, Natural history of	177
Hereditary variation, Note having reference to	. 148
Hermaphrodite Satyrus Semele, Capture of an	105
Heterocerous Lepidoptera, New species &c., of, from Canterbury, New Zealand	
collected by Mr. R. W. Fereday	61, 92
Homalota rufotestacea, Kraatz, Occurrence in Britain of	. 218
Hybernia defoliaria, Late appearance of	253
Hydroporus elegans, &c., On difference in shape of thorax in sexes of .	. 169
Hylesinus crenatus, H. fraxini, and H. vittatus, Observations on the habits	
and transformations of	. 120
" Notes on the habits of	20
Hylurgus pilosus, Notes on Cryphalus binodulus and	. 198
Hymenoptera, Notes on some parasitic; with descriptions of new species.	154
Hypermecia angustana of Hübner, Capture in England of the true: and cor	
rection of synonymy	251
Hyponomeuta vigintipunctata, Note on	. 228
71 11 17 TO 1 1 11 11 0	
Ichneumonidæ, The late Mr. Desvignes' collection of	51
Imhoff, Dr. Ludwig, Obituary notice of	. 150
Insects found on Glaciers	170
Ischnomera melanura, Curious locality for	. 20
T Was Partle (Patricke) Com M. Australia On ton	
Lamellicorn Beetles (Rutelidæ) from N. Australia, On two new species of .  Larentia salicata in North Devon ,	8
Larva of Abraxas grossulariata distasteful to frogs	205
, Acidalia holosericata, Description of the	131
, Charæas graminis, Note on the	225
" Eupithecia consignata, Bork., Description of the	. 72
"Fidonia pinetaria, Hub. (brunneata, Steph.), Description of the	108
, Luperina cespitis, Note on the	225
,, Lycæna Artaxerxes, Description of the	176
" Polia nigrocincta, Capture of the	. 77
" Vanessa cardui, Curious variety of the	278
" Zygæna nubigena, Observations on the habits of the	73
Larvæ of Heliophobus popularis, Charæas graminis and Lupernia cespitis,	
Note on the	225
" some fir-feeding Lepidoptera, Notes on the	178
Lepidoptera at Guestling, in 1868	174
" Haslemere, Stray notes on	227
" bred and captured in the spring of 1868	48
, , &c., in the spring	77
" captured in Morocco	299

	PAGE
Lepidoptera, Descriptions of species of, confounded with others described by	
Linnæus and Fabricius	270
" from "Goolmurg" in Cashmere, Notes on	33
" inhabiting Ross-shire, Notes on the	281
" swarming on rushes	22
" taken at Guestling, near Hastings, in 1867	23
Lepidopterous Fauna of Haslemere and its vicinity, An analytical view of the	211
Leucania albipuncta, W.V., a species new to Britain, Capture of	173
,, at Yaxley	278
Libellula (Diplax) vulgata, Note on a British example of	220
Limenitis Sibylla, Note on the earlier stages of	226
List of captures of Hemiptera in Palestine and Syria, together with descrip-	
tions of several new species	, 135
" " Eupitheciæ taken in Derby and the neighbourhood: with notes .	21
	, 216
" " Noctuidæ observed in Morayshire	201
Lithobius forcipatus mothing	170
, Note on	197
Lithocharis maritima near South Shields, Capture of	19
Lithocolletis Bremiella on Orobus tuberosus	22
Lithosidæ, Notes on the earlier stages of some species of	109
Live Clytus arietis in Museums	23
Localities for Mesites Tardii	99
London Lepidoptera	49
Lucanus, Curious capture of	124
Luperina cespitis, Note on the larva of	225
Lycæna Ægon, Natural history of	241
, Arion, New locality for	78
,, Artaxerxes, Description of the larva of	176
" Medon (Agestis) and Artaxerxes, are they distinct? .	187
Macaria notata in Scotland	104
Macroglossa stellatarum in the North of England	172
Macro-Lepidoptera at Rannoch	221
Magdalinus duplicatus, Germar, in Scotland, Occurrence of	168
Malthodes fibulatus, Kies., Capture of	101
, New locality for	101
, Notes on the British species of	18
Melitæa Cinxia, Abundance of the larvæ of	24
Mesites Tardii, Localities for	99
" on our North Eastern Coast, Capture of	71
Mild winter, Note on the effects of	254
Morocco, Lepidoptera captured in	298
Moths at Nettles	76
Movements of British Entomologists	25

	PAGE
Nepticula minusculella at Cheshunt	280
Neuronia clathrata in England, Note on	. 251
Neuropterous insect from N.W. India, belonging to the genus Dilar	239
New British saw-fly; Tenthredo olivacea of Klug	. 44
" locality for Lycæna Arion	78
" species of Lamellicorn Beetles (Rutelidæ) from N. Australia, On two	. 8
,, Zealand, New species, &c., of Heterocerous Lepidoptera from Canterbu	ry
	8, 61, 92
Noctuidæ observed in Morayshire, A list of	201
Nomenclature, A word or two on the perpetuation of blunders in	. 181
" Abuses in	. 148
Northern British Lepidoptera, Notes on	. 102
Notes on Cicindelidæ from tropical America	. 287
" collecting, management, &c., (Lepidoptera); the caterpillar state	e 14
" effects of mild winter	. 254
" Lepidoptera at Ashford, Kent	. 223
" Carmarthen	. 204
" " " Wicken Fen	. 223
" Mr. Jenner Fust's "Distribution of British Lepidoptera" .	. 147
" Scotch Lepidoptera	. 204
" some British Syrphi	. 7
,, the British species of Malthodes	. 18
" Scoparia (Lepidoptera)	. 291
" " currant-gall on Salix herbacea	. 21
" ,, earlier stages of some species of Lithosidæ	. 109
" ,, pairing of Cheiropachus quadrum	. 297
Obituary notice of Dr. Ludwig Imhoff	. 150
Occurrence in England of the larva of a terrestrial Trichopterous inse	et;
Enoicyla pusilla, Burmeister	43, 143
,, of a genus of Coleoptera new to Britain	. 44
Octotemnus glabriculus, Note on the oviposition of	. 297
Odour emitted by Sphinx convolvuli	. 206
Omias new to Britain, Capture of a species of	. 44
Orthosia suspecta at West Wickham	. 150
Outline, An, of a re-arrangement of the genera of Ephemeridæ .	. 82
Oviposition of Octotemnus glabriculus, Note on the	. 297
Ovipositing of Pamphila Sylvanus, Note on the	. 129
Pamphila Sylvanus, Note on the ovipositing of	. 129
Parasitic Hymenoptera, Notes on some, with descriptions of new species	. 154
Penthina capræana and other Lepidoptera bred from sallow	. 229
Peronea umbrana in Westmoreland	. 224
Philadrus Description of a new resident	. 142
Philhydrus, Description of a new species of Phlæodes crenana, Note on	. 240
a microus cromand, Note on	. 28

Phosphænus hemipterus, Note on	PA	ge 70
Pieris Daplidice near Margate, Capture of		05
Plusia new to Britain, Occurrence of (P. ni)		107
		27
		128
,, ni, Further notes on	• 1	77
	1	143
D. C. Duitty of		25
Prices of rare British Lepidoptera  Pseudopsis sulcatus at Scarborough, Occurrence of	-	142
Psocidæ, Description of a new species of (Cæcilius atricornis) inhabiting		1-162
		196
Britain		190
Queen-bee, On the fecundity of the		71
, , , , , , , , , , , , , , , , , , , ,		
Railway train stopped by caterpillars	. :	230
"Report on the Culture of Bombyx Yama-Mai.": Review		301
Results of a day and a night's collecting in Sherwood Forest		79
Rhynchites megacephalus, Germ., in Japan, Occurrence of		169
Rhynchophora on the South East Coast, Notes of spring		70
Rygmodus, White, Note on the genus		194
Saprinus (Gnathoncus) punctulatus, Thoms., Note on		<b>2</b> 50
Saturnia carpini, Early appearance of		254
" ,, in Orkney, Note on the habits of		49
Satyrus Semele, Capture of an Hermaphrodite		105
Scoparia angustea, New locality for		131
, Note on the British species of		291
" (Sc. Zelleri, Wocke) new to Britain, Occurrence of		131
" Zelleri at Norwood		131
" " Note on		149
Scoria dealbata: correction of an error		253
Scottish Lepidoptera, &c Notes on		104
Scydmænus fimetarius taken near Newcastle-on-Tyne		246
Second broods?		175
Sesia myopæformis in hawthorn		78
,, ,, ? in Mountain-ash		173
Sialis fuliginosa in Worcestershire		125
Sigara minutissima, Fab., Capture of	٠	142
Sinodendron cylindricum, Note on the habits of, during oviposition, &c		139
Species of Trichopterygia new to the British list, On some		9
Sphingidæ in Japan during the past summer, Note on the abundance of .		173
Sphinx convolvuli, Abundance of, near Exeter		128
,, and a second specimeu of Deilephila lineata in Kildare.		162
, and Acherontia Atropos at Folkestone		171
, and Colias Hyale near Birmingham		107
, and Deilephila lineata at Guestling		106
at Alloa, N.B.		162

iz

Sphinx	convolvul	i at Haslem	ere .						۰		•		130
3,	37	" Marlbo											128
23	,,,	" Reigate											172
21	,,	Note on											25
21	22	Observati	ons on the	e occur	rence	of, in	Gre	eat :	Brit	rin			160
93	22	Odour em	itted by										20
27	99	taken at s											17
	ta larician	a											146
		arva of a Co											220
		hora on the											70
		ote on											28
		of Abraxas											24
Syrphu	s, Europea	n species of	allied to	S. rib	esii .								190
	, ,	1											
Tapinos	tola elvmi	at Cleethor	ne, Occur	rrence	of								205
		a of Klug,											44
		eularia, Earl											253
		pterous inse											
		illa, Burmei				_							143
		Entomologis											
		of North Ar											
		Entomologis											
		view .											152
		ioological Li											
		W. S. Dallas										ĺ	179
		tion of a ne											133
		additions to								٠			277
		w to the Br											9
		ructive to si											276
Turner,	Charles, 1	Death of											25
Vanessa	Antiopa	at Godmano	hester								۰		224
**	Atalanta.	Small spec	imen of										147
22	cardui, C	urious varie	ty of the	larva o	f								278
		hydasis bett											148
	Note hav	ing referen	ce to here	ditary									148
Variety		a cardui, E											229
,	·												
Winter	captures										۰		280
Xylina	conformis,	Note on						•		۰			<b>27</b> 8
53 2	Zinckenii,	Another .											252
		cillaris, &c.											24
											_	40	0.40
Yama-M	lai culture			•	•	•	٠			•	1	49,	252
P7		01	on 42-	hobit-	of th	o love	20.05						73
Lygæna	nubigena	, Observatio	ns on the	пария	or m	e min	a oi						10

### INDEX OF SUBJECTS NOTICED IN THE PROCEEDINGS OF THE ENTOMOLOGICAL SOCIETY OF LONDON.

Acheta destructive to forest-trees in Madras, Species of	0
agi j pina picta captured at mgngato	$18^{0}$
	302
Anax mediterraneus in Italy, Appearance of swarms of	26
Anniversary Meeting	258
Antispila Rivillei, a vine-leaf miner	26
	259
Aprilia attacking vines, species of	80
Arctia villica, Variety of	
Ateuchus sacer, Habits of	51
D	238
bees and wasps from them, wests of	286
birds and larvæ, On the relations between	
blatta melanocephala destructive in Orema-houses	302
Dombi and Apathi, Arimetic relations between	302
	286
British Lepidoptera, Varieties of 51,	238
Butterflies, Notes on eastern	
Buprestidæ, New species of	238
are producted at the second of	
Cænis macrura, Anatomy of	81
Castnia, Transformations of	51
Catocala fraxini, from Eastbourne	210
Cerosterna gladiator, destructive to forest-trees in Madras	26
Chalcididæ, Large exotic species of	81
Chœrocampa Celerio, captured at Brighton	180
Coffee-tree, Various larvæ destructive to the	26
	302
Colletes cunicularia, a new British Bee	
Conocephalus from West Africa, found alive in England	285
Cork, A substitute for	286
Crambus myellus, new to Britain	238
Dianthœcia Barrettii from Ireland, Specimens of	238
Dilar Hornei, from North-west India	286
Drilus flavescens, 2 ♂ and 1 ♀ simultaneously in copulâ	81
Enoicyla pusilla, a new British Caddis-fly 51,	210
Entomological nomenclature	210
Ephemeridæ from Veragua, Gigantic species of	301
" Microscopic preparations of	· 81
European Butterflies, Varieties of	302
and opening and opening the second of the second of the second opening	
Gastrophysa polygoni in Cambridgeshire, Swarms of larva of	210
Glow-worm in February, Luminous larva of	286
Heliothis armigera, from various parts of the world	286
Hestina Zella, from India; a new species	259
Heteromera, New species of 51, 81,	180
Homalota, British species of	302
	286
2005, Carlo pour and carrier species of	27
, On the duration of life in	~,

	AGE
Hymenoptera, New and curious forms of	210
" New species of Australian aculeate	27
Hypercallia Christiernana	, 81
Ichneumon larva externally parasitic on a spider	238
Isle of Man, Dwarf Lepidoptera from the	180
	100
Lasiocampa quercus, Gynandromorphus example of	180
Lepidoptera, Dwarf, bred in 1868	286
" New species of Diurnal	302
Leucania albipuncta, from Folkestone; a new British species	180
Limenitis Sibylla, Melanism in	210
Lucanidæ, New genus and species of	286
25	000
Marshall, Rev. T. A.; Vote of condolence with	286
Micropeplus staphylinoides, Larva of	81
Monochamus taken alive in London, Exotic species of	81
Nicaragua, Butterflies from	286
Nycteribidæ, from Ceylon	285
Tycteriotae, from Ceylon	200
Odynerus, Nest of, in a letter clip	81
Ommatomenus sericatus; a new genus and species of Prionidæ	286
Ophion macrurus, bred from cocoons of Bombyx Cynthia	81
Otiorhynchus picipes damaging roses	51
Ovipositor, Structure of the	238
Ovipositor, Structure of the	200
Pachetra leucophæa, from Red-hill	259
Panorpa, European species of	302
" New species of, from Java	302
Papilio Machaon and allied species from Japan	302
: II-11- D	210
,, In Hudson's Bay ,, Zalmoxis, from Old Calabar	302
Phytophaga, New species of	302
Polia nigrocincta from the Isle of Man.	210
	6, 81
Proctotrupidæ, Pupæ of, attached externally to a Xantholinus larva	26
Psyche crassionella at Hornsey	51
a by one or disposer that the control of the contro	01
Saturnidæ, Bred specimens of various species of	81
Scoparia Zelleri, captured at Norwood	180
Setina irrorella, Variety of	80
Sibyllina, Affinities of	238
South African insects	180
Tachyris Jacquinotii, Note on	27
Tangiers, Insects from	81
Tapinostola elymi from near Yarmouth	210
Tipulæ, Swarms of larvæ of	286
Trichoptera, Contributions to a knowledge of European	180

Vanessa Atalanta, habits of, at Mentone, &c. .. ..

.. 302

PAGE

#### SPECIAL INDEX.

PAGE | Bledius bicornis ...... 201

COLEOPTERA.

Abbotia georgiana	Brachytarsus scabrosus 47
Paykulliana 168	Bruchus pisi 20
Abdera bifasciata 219	Bryaxis assimilis 249
Adelotopus 52	nigricornis 249
Agabus affinis 17	Waterhousei 249
nigro-æneus 46	
unguicularis 17	Calloödes Atkinsonii 9
Agathidium globosum 250	Carabus anglicus
Aleochara brevipennis 46	Cassida hemisphærica
lygæa 101	Cathormiocerus socius
Amara fusca 196	Cercyon laterale 47
Anisotoma vittata 250	terminatum 47
Anoplognathus æneus 8	Ceuthorhynchus Chevrolatii
Anthonomus ulmi (black var.) 200	crux
Aphodius constans 19	impressicollis 201
nemoralis 19	punctiger 71
porcus, parasitic on Geo-	tarsalis 71
trupes stercorarius 273	terminatus 71
scrofa 100	urticæ
villosus44, 201	Chætocnema confusa
Aphthona cærulea 164	Choleva frater. 250
cyanella 165	nubifer
venustula 165	soror
Apion cerdo 124	Chrysomela marginata
near Newcastle-on-Tyne 142	Cionus verbasci 4
craccæ 71	
dissimile 219	Clambus coccinelloides
filirostre 219	nitidus
Gyllenhali 219	Clytus arietis alive in museums 12
minimum 46	Coccinella labilis 4
scrobicolle 276	Cœliodes exiguus 7
simile 219	Colenis latifrons
Apteropeda globosa 201	Coleoptera, Notes on British species
Aridius nodulosus	of, in Gemminger and Von
Athöus rhombeus 201	Harold's catalogue 24
Atomaria ferruginea 143	Conopalpus testaceus 7
fimetarii 143	Vigorsii 7
Attagenus megatoma	Corticaria borealis
Transferred Hit Gardana Hit Total	Corylophus sublævipennis 19
Balaninus cerasorum	Cryphalus binodulus 198, 22
rubidus 218	tiliæ } 19
Baridius picicornis	abietis )
Barynotus Schönherri 200	Cryptohypnus pulchellus 13
Bembidium obliquum at St. Leonard's 219	sabulicola 10

COLEOPTERA (continued).	Homalota rufotestacea 218
Ctenicerus cupreus pectinicornis habitats of 276	Thomsoni
habitats of 276	
Cyphon coarctatus 3 1	Hydræna concolor
Cyphon coarctatus & 198	
Justicornios + )	Hydroporus elegans, difference in the shape of thorax of sexes of 169
Deleaster dichröus20, 21, 142	Hylesinus crenatus20, 120
Diglossa mersa 201	fraxini20, 120
Donacia geniculata	vittatus20, 120
lævicollis198, 218	Hylurgus pilosus 198
sparganii 201	Hypophlœus castaneus
Dytiscus lapponicus, in Ireland 141	Hypophiceus castaneus
	Ischnomera melanura 20
Eledona agaricola 201	
Elleschus bipunctatus 46	Lasioderma testacea
Epuræa limbata, habitat of 169	Lathridius pini
melina 46	undulatus 198
Erirhinus salicis 46	Lathrobium angustatum 197
schirrosus 46	rufipenne 197
Eros affinis 201	Limnebius papposus 46
Euplectus Kunzei	Liodes orbicularis 201
Enthia plicata	Lithocharis maritima 19
Evæsthetus læviusculus 46	Lucanus, curious capture of 124
ruficapillus	
	Magdalinus barbicornis 219
Graptodera ampelophaga 163	duplicatus 168
montana 163	Malthodes atomus 19
Gymnetron beccabungæ, type 200	biguttatus 18
Gyrinus æneus 217	dispar 19
bicolor 57	fibulatus 19, 101
caspius 57	flavoguttatus 19
colymbus 58	guttifer 19
distinctus 57	minimus 18
marinus 58	misellus 19
mergus 56	mysticus 19
minutus 55	nigellus 19
natator 56	pellucidus 19
opacus 59	Mantura chrysanthemi 201
urinator 55	obtusata 201
	Meligethes subrugosus
Halticidæ, notes on the British 163	Mesites Tardii71, 99
Harpalus servus 71, 219	Murmidius ovalis
Hister marginatus 219	Mycetoporus punctus
Homalium mesomelas 248	Myllæna minuta
Homalota angusticollis 219	
celata 219	
lævana 219	
oblita 219	sepulchralis 249

COLEOPTERA (continued.)	PAGE
Nitidula 4-pustulata 46	Quedius microps 248
rufipes	nigricornis 248
	scitus 201
Octotemnus glabriculus, oviposition of 297	Raphirus nigricornis
Ocypus picipennis 249	Rhygmodus modestus
Odontocheila bipunctata 288	pedinoides
cayennensis 288	Rhynchites cuprens 79
Oseryi 289	megacephalus in Japan 169
rubefacta	mogacopianas in vapan 100
rugatula 289	Saprinus punctulatus 250
trochanterica 289	rotundatus 250
Omias pellucidus 44	Scydmænus fimetarius 246
Orchesia minor	Wetterhali 249
	Scymnus nigrinus 200
Otiorhynchus monticola in Ireland 142	Silpha carinata 249
Oxypoda flavicornis	Sinodendron cylindricum, habits of,
	during oviposition 139
Oxystoma genistæ 46	Sitones cambricus71, 201
Pachyrinus comari 46, 200	Smicronyx cicur
Phalacrus substriatus 142	Sphæroderma testacea
Philhydrus punctatus 240	Staphylinus chalceocephalus, 249
Philonthus cinerascens 46	Stenolophus anglicus
nigrita 46	Teutonus 46
nigriventris 101	Stenus aceris
signaticornis 46	assimilis
Philorhinum subpubescens 249	fornicatus
Phlœotrya Stephensii79, 201	incrassatus
Phosphænus hemipterus44, 70	latifrons
Phratora cavifrons 100	longitarsis
Phyllotreta antennata	melanarius
obscurella 165	nitidiusculus
Phymatodes variabilis 201	pallitarsis
Phytonomus fasciculatus 70	picipennis
suspiciosus	plantaris
Plectroscelis lævicollis 198	ruralis 249
subcærulea	sulcicollis
Pseudoxycheila tarsalis	Stilicus geniculatus
Pseudopsis sulcatus	orbiculatus 46
Psylliodes cuprea	Strangalia 4-fasciata 201
instabilis 167	
Ptilium Halidaii	Tachinus elongatulus 219
minutum 250	Tachyusa constricta 200
Ptinus sexpunctatus	Tarus vaporariorum in Ireland 142
Zuman soapanouavas miniminiminiminiminiminiminiminiminimin	Telephorus abdominalis 201
Quedius fuscipes 47	Telmatophilus Schönherri

COLEOPTERA (continued).	Corixa borealis
Thyamis absinthii 165	
agilis	decora
patruelis 166	dubia
Tomicus micrographus	Fabricii
Trachys troglodytes	intricata 295
	perplexa
Trichius fasciatus	Sharpi
arionopion y a data	venusta 265
Guerinii 10	Whitei
obscæna 12	Deræocoris amœnus
Trogosita sp. (?) in silk	Dollocootis discours in the state of the sta
Tropiphorus carinatus71, 200	Emesa Dohrnii
mercurialis 200	Companie Eighari 90 117
Trox sabulosus 46	Grypocoris Fieberi 29, 117
Xylophilus populneus 219	Lasiocoris Flori
Xyloterus quercûs	Leprosoma Stali
Ajiototus quozous iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	Litosoma obsoleta
	Lochus (n.g.) squalidus
DIPTERA.	Lygæosoma Tristrami
Anthomyia larva voided by the hu-	Mimicus (n.g.) nitidus 66
man subject 144	Monanthia similis 259
Bibio anglicus 268	Di +
	Phytocoris marmoratus
Syrphus confusus 7	Pithanus Marshalli 114
diaphanus 191	Psallus Whitei 263
grossulariæ 191	Sciocoris Cambridgeii 30
lasiophthalmus 7	Sigara minutissima 142
latifasciatus 192	Poweri
lineola 191	Scholtzi
maculicornis 7	Stiphrosoma amabilis
melanostoma 192	
nigritarsis	Teratocoris Saundersi 260
nitens (?) 193	
nitidicollis 192	
ochrostoma 192	HYMENOPTERA.
ribesii	
vitripennis 191	Aptesis graviceps
vittiger 191	hemiptera 157
	stenoptera 156
	Cheiropachus quadrum
HEMIPTERA-HETEROPTERA.	Colletes cunicularia
Atractotomus magnicornis 264	Crœsus septentrionalis, Note on 21
	Cynips, Discovery of a male
Calyptonotus æthiops 65	lignicola, Use for galls of 171
sanguineus 32	
Camptobrochis serenus	Formica nigra early swarm of 298

HYMENOPTERA (continued).	PAGE
Ichneumon crassipes	Catoptria aspidiscana
tenneumon crassipes	Cerostoma scabrella
Megaspilus atelopterus 159	Chœrocampa Celerio150, 172, 173
Phygadeuon errator 154	Elpenor 108
, scoticus	nerii
,, 5000000	Charæas graminis, larva of
Tenthredo olivacea 44	Chrosis euphorbiana, bred
	Chrysophanus Kasyaha
	Cidaria bulbulata
LEPIDOPTERA.	delicatulata
Abraxas grossulariata 24, 131	pyramaria
Acherontia Atropos 130, 147, 171	Cilix spinula, Scotch 299
Acidalia bisetata, larva of98	Coccyx hyrciniana, habits of 206
emutaria	Colias Edusa
holosericata, larva of 95	Hyale106, 107, 130, 175, 205, 253
scutulata, larva of 98	Collix sparsata
Acontia luctuosa, larva of	Coremia ardularia 63
Acronycta alni 105, 107, 144, 208	deltoidata
auricoma 174	inamœnaria
Agrotera nemoralis	pastinaria
Agrotis admirationis	ypsilonaria 64
ceropachoides	Cosmia pyralina 23
cœrulea	Cosmopteryx Lienigiella 105
cinerea	Crambus rorellus
Alysia specifica	Cynthia cardui
Amphydasis betularia 148	Oynomia carata
Anthocharis Belemia 299	Dasycampa rubiginea, larva of 206
Douei271, 299	Dasyuris partheniata 93
Eupheno 271, 299	Deilephila lineata104, 105, 106, 107, 128,
Argynnis Euphrosyne, larva of 125	129, 130, 162, 172, 300
Jainadeva 34	Depressaria rhodochrella 105
Jerdoni	supropinquella 105
Kamala	Dianthœcia Barrettii
Lathonia 105, 106, 130, 131,	cæsia
147, 171	capsophila, bred 24
Asthena mullata	echii 220
Aulocera Swaha 35	irregularis 220
Weranga 35	Dicrorampha flavidorsana 128
Bactra uliginosana	Elachista paludum, bred
Botys asinalis	Epinephile Goolmurga 36
200	Maiza 36
Calligenia miniata, larva of 111	Neoza 35
Camptogramma fuscinata 92	Euchlöe Calleuphenia 271
stinaria 92	Crameri
Catocala fraxini	Eumichtis sistens

xviii.

LEPIDOPTERA (continued).	Lithosia mesomella, larva of
Euperia fulvago 131	*
Eupithecia cidariaria 62	molybdeola (sericea) larva of 109 plumbeola (complanula), lar-
consignata 72, 73, 107	va of 111
larva of 72	Luperina cespitis, larva of 225
irriguata 205	Lycæna Ægon, larva of 241
Eupœcilia anthemidana	Arion 78
ciliella	Artaxerxes, larva of176, 187
D ( oritically )	Medon (Agestis) 187
	medon (ngosta)
Heydeniana compared	Macaria notata 104
	Macroglossa stellatarum 172
Euthemonia russula	Meliana flammea 104
Fidonia pinetaria 104	Melitæa Cinxia 24
larva of 108	monton on an
(?) servularia 43	Nascia cilialis 105
•	Nepticula minusculella at Cheshunt 280
Gelechia lathyri 104	Nitocris bicomma
Gnophos pannularia	epiplecta
Gonepteryx Nipalensis	exundans
Grapta C-album	limbosa
Hadena atriplicis 79	nana
ALUGUNA GOVERNOON MANAGEMENT OF THE PARTY OF	Noctua pyrophila 203
202100000000000000000000000000000000000	Nonagria juncicolor
peregrina at Lewes	propria
Helastia eupitheciaria	Notodonta trepida, Scotch 299
Heliophobus popularis, larva of 225	Nyctalemon Zampa
Heliothis armigera 147	zodiaca
peltigera	Orthosia suspecta
Hepialus hectus, larva of	Orthosia suspecta
Hybernia boreophilaria	Pamphila Sylvanus 129
defoliaria	Panagra scissaria 4
Hypercallia Christiernana, bred 105	Papilio cypræofila 66
Hypermecia angustana, the true 251	zonaria
Hyponomeuta vignitipunctata 228	Penthina capreana
Larentia catocalaria	Peronea umbrana
corcularia	Phlæodes crenana, bred 23
infantaria	Pielus umbraculatus
salicata in N. Devon 205	variolaris
Leptosoma antislata	Pieris Daplidice
Leucania albipuncta	Gliciria
Limenitis Ligyes	Sabellica
Sibylla, larva of. 226	Plusia Ni
Lithocolletis Bremiella	Polia nigrocineta
Lithosia aureola, larva of	Polygonia Fortinata
griseola, larva of	Polyommatus Ariana
helveola, larva of	Nazira
norveora, rarva or	

LEPIDOPTERA (continued).	
P.	AGE
Polyommatus Nycula	37
Pyrrhopyga Verbena	272
D-4'-' 1 6	150
	179
,1 ,	178
Röslerstammia Erxlebella	104
Saturnia carpini49,	254
-	105
Scoparia angustea	131
notes on the British species	
of	291
Zelleri 131,	149
Scoria dealbata 223,	253
Sesia myopæformis	173
sphegiformis	48
Sphinx convolvuli 106, 107, 128,	130,
160, 162, 171, 206, 254	172,
Spilonota lariciana	146
Stauropus fagi	23
Sterrha sacraria at Wallasey	129
Talæporia pubicornis	78
Tapinostola elymi at Cleethorpe	205
Tephrosia crepuscularia	253
Thais rumina	299
Tryphæna subsequa	203
Vanessa Antiopa	224
Atalanta	147
cashmirensis	34
V-Album	34
xanthomelas	34
Xylina conformis	278
Zinckenii	252
Xylocampa cucullina	40
inceptura	40
Xylomiges conspicillaris	24
Zygæna nubigena, larva of	73

	AIA.
NEUROPTERA (in the Linnwan sens	
Agrypnia picta125,	143
	00
Bäetis, genus	88
Bætisca, genus	89
Cæcilius atricornis	196
Campsurus	83
Chimarra marginata	125
Chrysopa tenella	251
Clöeon, genus	87
Cænis, genus	82
Coloburus,	89
Dilar Hornei	239
Enoicyla pusilla43, 143,	170
Ephemera, genus	85
Ephemerella, genus	87
Halesus auricollis	277
Hemerobius concinnus	125
Heptagenia, genus	90
Hexagenia, genus	8
Leptophlebia, genus	86
Neuronia clathrata	251
Oligoneuria, genus	88
Palingenia, genus	84
Pentagenia, genus	88
Polymitarcys	84
Potamanthus, genus	86
Setodes testacea.	128
Sialis fuliginosa	128
Siphlonurus	89
Sipilonal as	0.
Tinodes Schmidtii	277

Tricorythus.....

#### INDEX TO CONTRIBUTORS.

PAGE	
Allis, T. H	Enock, F
Armstrong, W. G 106	Evans, Henry
Baker, George 21	Fletcher, J. E
Barrett, C. G. 22, 130, 175, 178, 205, 206,	
211, 227, 228, 229, 244	Gaviller, A
Bates, H. W., F.Z.S., Pres. Ent. Soc. 2.7	Greening, Noah
Bax, E. B 205	Greene, Rev. J., M.A
Baxendale, D	Grinstead, Rev. C., M.A
Bishop, T. G	Guenée, Achille
Blackburn, J. B 48, 130, 172, 221	Harwood, W. H 23, 106, 131
Blackburn, Thomas	Hearder, G. J., M.D 131, 144, 204
Blackmore, Trovey	Hellins, Rev. J., M.A 73, 95, 107, 108,
Bloomfield, Rev. E. N., M.A 22, 23, 106, 172, 174, 175	109, 130, 160, 197, 206
Bold, T. J 19, 24, 142, 170, 172, 246	Herd, W
Borthwick, R 162	Hislop, R
Boyd, W. C	Hodgkinson, J. B 49, 78, 224
Briggs, T. H	Hopley, Catherine C
Brown, Edwin 251	Horton, Rev. E., M.A
Buckler, W 75, 125, 176, 177, 225, 226,	Hutchinson, E. S
241, 279	11 utchinison, E. S
Butler, A. G., F.L.S., &c 6), 131, 270	Inchbald, Peter 21
Campbell, Charles 24, 48, 280	Jagger, W
Carrington, T. J 77	Jeffrey, W. R 223, 253
Champion, G. C	Jenner-Fust, H., jun., M.A 24
Chapman, T. Algernon, M. D. 20, 120, 139,	Jones, A. H
198, 273, 277	Jordan, R. C. R., M.D 134, 146
Chappell, Joseph	Kenrick, G. H 107
Clarke, A. H	Kidd, H. W
Counting I I	Kirby, W. F
Courtice, J. L	Knaggs, H. G., M.D., F.L.S 14, 78, 127,
Cox, Julia E	131, 173, 291
Crewe, Rev. H. Harpur, M.A 72	T C / A M D E
Cruttwell, G. T	Lang, Capt. A. M., R.E
	Lawson, R
Dale, C. W	Lennon, W
Dallas, J 147	Lewes, V. B
De Grey, Hon. T., M.A., M.P104, 105, 251	Lewis, George
Dembski, E 78	Llewelyn, J. T. D., M.A., F.L.S 253
D'Orville, H	Longstaff, G. B
Douglas, J	_
Douglas, J. W. 27, 65, 114, 135, 259, 293	McLachlan, R., F.L.S 43, 44, 125, 143, 170, 196, 220, 239, 277
Ounning, J. W., M.A., F.L.S., &c 181, 230, 254	Marsh, J. G 101
200, 201	Marshall, Rev. T. A., M.A. 154, 170, 208,
Eaton, A. E., B.A 82, 298	234
Edmunds, Abraham 24	Mathew, G. F
Cedle, Thomas 49	Matthews, A

	xxi.
PAGE	PAGE
Matthews, Rev. A., M.A 9	Sidebotham, Joseph
Meek, E. G 150	Slater, J. W
Meek, Martha	Smith, Rev. B
Merrifield, F	Smith, Frederick 71, 130, 172, 276, 298
Moberly, E. H	Smith, P. Basden 106
Morley, T	Somerville, J. E., B.D 141, 142 Stainton, H. T., F.R.S., &c 107, 300
Müller, Albert118, 132, 143, 150, 171,	Stowell, Rev. H.A., M.A 144
216, 220, 276	Taylor, A. H
Norman, George 201	Taylor, J. Kidson 200
	Todd, Rev. E. H., M.A 23
Pasley, L. M. S	Traill, J
Pelerin, W. G 44	Tylden, Rev. W., M.A70, 169
Phillipps, F 254	Tyrer, R. and W 79
Prest, W	Ullyett, H129, 171
Preston, Rev. T. A., M.A	Vanghan, Howard 131
Pryer, H	Verrall, G. H
Purdey, W	Wallace, Alexander, M.D 252
	Waterhouse, C. O
Ragonot, E. L	Waterhouse, G. R., V.P.Z.S., &c 163
Robinson, W. Douglas	White, F. Buchanan, M.D 104, 131, 204,
Rye, E. C 20, 44, 45, 68, 123, 124, 133, 169, 197, 218, 247, 250, 276	224, 281
200, 201, 210, 211, 200, 210	White, Rev. W. Farren, M.A Wilkinson, Thomas71, 142, 143
Sang, John 78	Wollaston, T. V., M.A., F.L.S 101
Scott, John20, 27, 65, 114, 135, 259, 293	Wormald, Percy C125, 251
Sharp, David, M. B 17, 18, 52, 100, 124,	Zeller, Professor P. C
196, 217, 240	Zener, Troissor 1. O 104
	A PUR CAPITAL PROCESSION
	AND SPECIES DESCRIBED
IN THIS	VOLUME.
COLEOPTERA.	HEMIPTERA-HETEROPTERA.
GENUS. PAGE	GENERA. PAGE
ACTIDIUM, Matthews 12	GRYPOCORIS, Douglas & Scott 116
SPECIES.	Lochus, D. & S
Anoplognathus æneus, C. O. Water-	Mimicus, D. & S
	SPECIES.
Calloödes Atkinsonii, C. O. W 9	Calyptonotus æthiops, Douglas 5
Odontocheila rubefacta, Bates 287	Scott
rugatula, B	sanguineus, D. S. S. 28, 32
trochanterica, B 289	Camptobrochis serenus, D. & S29, 135
Philhydrus punctatus, Sharp 241	Corixa borealis, D. & S
Pseudoxycheila tarsalis, Bates 290	decora, D. & S 265
Ptilium Halidaii, Matthews 12	dubia, D. § S
Thyamis agilis, Rye 133	intricata, D. & S 295
Trichopteryx anthracina, Matthews 11	perplexa, D. & S 267
	Sharpi, D. & S
DIPTERA.	venusta, D. & S 265
Bibio anglicus, Verrall 268	Whitei, D. & S

PAGE	PAGE
Deræocoris amœnus, D. & S 29, 115	Coremia pastinaria, G 64
Emesa Dohrni, D. & S	ypsilonaria, G 64
Grypocoris Fieberi, D. & S29, 117	Dasyuris partheniata, G 93
Lasiocoris Flori, D. & S 28, 67	Epinephile Goolmurga, Lang 36
Leprosoma Stali, D. & S 27, 29	Maiza, L 36
Lochus squalidus, D. & S 29, 139	Neoza, L
Lygeosoma Tristrami, D. & S 28, 31	Euchlöe Calleuphenia, Butler 271
Mimicus nitidus, D. & S 28, 66	Crameri, B 271
Monanthia similis, D. & S 259	Eumichtis sistens, Guenée 39
Phytocoris marmoratus, D. & S 261	Eupithecia cidariaria, G
Pithanus Marshalli, D. & S. 29(Flori), 114	Fidonia (?) servularia, G
Psallus Whitei, D. & S	Gnophos pannularia, G
Sciocoris Cambridgeii, D. & S28, 30	Hadena nervata, G
Stiphrosoma amabilis, D. & S29, 136	Helastia eupitheciaria G
Sigara Poweri, D. & S	Hybernia boreophilaria, G
Scholtzi, D. & S 296	Larentia catocalaria, G
Teratocoris Saundersi, D. & S 260	corcularia, G
	infantaria, G
HYMENOPTERA.	Nitocris bicomma, G
Aptesis graviceps, Marshall 155	epiplecta, G
stenoptera, M 156	exundans, G 5
Megaspilus atelopterus, M 159	limbosa, G
Phygadeuon errator, M 154	nana, G
scoticus, M 154	Nonagria juncicolor, G 2
	Nyctalemon Zampa, Butler 273
LEPIDOPTERA.	zodiaca, B
GENERA.	Panagra scissaria, Guenée
Alysia, Guenée 3	Papilio cyprœofila, Butler 60
Dasyuris, G 92	zonaria, B
HELASTIA, G 94	Pielus umbraculatus, Guenée 1
Nitocris, G 4	variolaris, G
Polygonia, G	Polygonia fortinata, G
SPECIES.	Pyrrhopyga Verbena, Butler 272
Agrotis admirationis, Guenée 38	Xylocampa cucullina, Guenée 40
ceropachoides, G 39	
cœrulea, <i>G</i>	NEUROPTERA (in the Linnman sense).
Alysia specifica, G 3	GENERA.
Argynnis Jerdoni, Lang 34	
Asthena mullata, Guenée 42	Campsurus, Eaton
Camptogramma fuscinata, G 92	Coloburus, E
stinaria, G 92	POLIMITARCYS, E
Cidaria bulbulata, G 94	SIPHLONURUS, E
delicatulata, G 94	Tricorythus, E 82
pyramaria, <i>G</i> 93	SPECIES.
Coremia ardularia, G 63	Cæcilius atricornis, McLachlan 196
inamœnaria, G 63	Dilar Hornei, McL

PAGE

#### ADDITIONS TO THE BRITISH INSECT FAUNA NOTICED IN THIS VOLUME.

COLEOPTERA.	PAGE
GENUS. PAGE	Phytocoris marmoratus 261
PHOSPHÆNUS	Psallus Whitei
	Sigara Poweri 296
SPECIES	Scholtzi 296
Agabus affinis	Teratocoris Saundersi 260
Aleochara lygæa	
Amara fusca	GENERA. HYMENOPTERA.
Apion cerdo	APHANOGMUS 160
scrobicolle	CERAPHRON 159
Attagenus megatoma	TRICHOSTERESIS 158
Cathormiocerus socius 68	
Corylophus sublævipennis 197	Aphanogmus hyalinipennis 160
Cryptohypnus pulchellus	tenuicornis 160
sabulicola 100	
Graptodera montana 163	Aptesis graviceps 155
Gyrinus caspius 57	stenoptera156
distinctus 57	Ceraphron bispinosus (
mergus 56	nanus 159
Homalota rufotestacea	nigriceps 159
Lathrobium angustatum 197	Colletes cunicularia
Magdalinus duplicatus	Habropelte striolata
Malthodes guttifer	Lagynodes pallidus 159
Meligethes subrugosus 100	Lygocerus pubescens
Murmidius ovalis	serricornis
Omias pellucidus	Megaspilus abdominalis 158
Omias pellucidus	alutaceus 159
Philhydrus punctatus 241	arcticus 158
Philonthus nigriventris 101	atelopterus 159
Phosphænus hemipterus 44, 70	borealis 158
Phratora cavifrons 100	crassicornis 15
Ptilium Halidaii	cursitans 158
Stenus incanus 197	fuscipes 158
Thyamis agilis	halteratus
Trachys troglodytes	melanocephalus 15
Trichopteryx anthracina	rufipes
ODSCÆHA	thoracicus 150
DIPTERA.	Phygadeuon errator
Bibio anglicus 268	scoticus
Syrphus confusus 7	Tenthredo olivacea 4
lasiophthalmus 7	Trichosteresis glabra 15
latifasciatus 192	
maculicornis 7	LEPIDOPTERA.
nitens (?) 193	Dianthœcia irregularis 22
moons (1) titter titte = 200	Dianthœcia irregularis
HEMIPTERA-HETEROPTERA.	Leucania albipuncta 17. Nepticula minusculella 28
Corixa borealis 293	Plusia ni
decora 265	Scoparia Zelleri
dubia	Scoparia Zeneri
Fabricii 267	GENUS. NEUROPTERA.
	ENOICYLA 43, 143, 17
intricata	
perplexa 267	Agrypnia picta 125, 14
Sharpi 295	Cæcilius atricornis
venusta 265	Enoicyla pusilla43, 143, 17
Whitei 294	Tinodes Schmidtii
Litosoma obsoleta 263	Tinodes Schillion 27
Monanthia similis 259	Halesus auricollis 27

#### ILLUSTRATIONS.

Dilar Hornei, anal appendages of & . . .

PAGE 240

Scopar	a alpina plate 1, fig. 18.
22	ambigualis " " 5.
,,	angustea , , , 19,
21	atomalis , , , 8.
,,	basistrigalis , ,, ,, 6.
,,	" . (explanatory diagram, A)
,,	cembræ ,, ,, ,, 4.
29	cratægella ,, ,, ,, 13.
23	,, (explanatory diagram, E)
,,	dubitalis ,, ,, 3.
,,	" (explanatory diagram, C)
,,	gracilalis . ", ", 16.
"	ingratella ,, ,, ,, 2.
,,	lineola " " " 17.
"	" (explanatory diagram, F)
32	mercurella . , ,, ,, 11.
,,	murana ", " 15.
33	, (base of wing, explanatory diagram B) 292
,,	pallida " " " 1.
,,	phæoleuca " " ,, 10.
23	,, (explanatory diagram, D)
22	resinea ,, ,, 9.
"	truncicolella . ", ", 14.
"	" (explanatory diagram, B, omitting base of wing) 292
,,	ulmella " " " 12.
,,	Zelleri ,, ,, 7.
	REVIEWS.
	KEVIEWS.
Faune :	Entomologique Française, Lepidoptères.—Berce
The Bu	sterflies of North America.—Edwards
The Ca	nadian Entomologist
The An	erican Entomologist
Catalog	us Hymenopterorum Europæ.—Kirchner
The Re	cord of Zoological Literature, Vol. iv, pt. 2.—Dallas 179
Bullett	no della Società Entomologica Italiana
Report	on the Culture of the Japanese Silk-worm, Bombyx Yama-mai
W	llace
A Cata	logue of the Insects of Northumberland and Durham (Aculeate Hy-
me	noptera).—Bold

# Entamologist's Monthly Magazine

NEW SPECIES, &c., OF HETEROCEROUS LEPIDOPTERA FROM CANTER-BURY, NEW ZEALAND, COLLECTED BY MR. R. W. FEREDAY.

BY ACHILLE GUENÉE.

#### FAMILY HEPIALIDÆ.\*

Genus Pielus.

PIELUS UMBRACULATUS, Guenée, n. s.

Alæ testaceæ: anticæ litura longitudinali albida, irregulari, nigro infra adumbrata: posticæ omnesque subtus testaceæ, basi pilis lætioribus. Femina major et dilutior. 50 millimétres.

The examples that I have seen of this species present two well-marked types. In the first the anterior wings of the male are dense, testaceous, sprinkled with an infinitude of paler scales, and the only marking is an unequal whitish band placed in the cellule, commencing as a point and finishing as a dash, the whole broadly shaded with black beneath. The posterior wings are nearly of the same tint, but less dense, with a brush of hairs, more yellow in colour, at the base. The body and the legs are concolorous. The female is larger, and extends to 60 mill. All the wings are much paler than in the male, and the anterior much less dense.

The second type is uniformly pinkish-grey, with fringes concolorous, and preceded (on the superior wings) by isolated black points. Besides, one sees, at the apex of the band, a transverse series of intermediate black points or streaks. I do not know the female of this form.

#### PIELUS VARIOLARIS, Guenée, n. s.

Alæ modo castaneæ, modo griseæ vel nigricantes, fimbriis intersectis: anticæ guttis disco albescente numerosis irregularibus sparsis, albidis nigro cinctis, lineaque subterminali nigra margines non attingente: posticæ subtus costa flavo-brunnea. 40 mill.

I only know the male, which varies greatly. The anterior wings are ordinarily chestnut-brown, with the disc whitish; but the brown often passes into blackishgrey; the wings are sprinkled with little irregular whitish spots, outlined with black, and other yet smaller spots entirely black; the largest are in the cellule, and

<sup>\*</sup> The British Museum Catalogues indicate many species proper to New Zealand, a country which appears to be very rich in Noeturni. 1 am able to recognize some of them, but the greater part of those sent to me seem new; it may be that the locality where Mr. Fereday collects is different to those which Mesers. Boiton, Colenso, and Sinclair visited, or that I have not been able to recognize many of them, from the too often little precise descriptions by Mr. Walker.—A. G.

their number and sizes vary very greatly; besides these there is generally a black subterminal line well marked, and sometimes interrupted, which does not reach the apex or the inner margin; another similar line, but less constant, precedes it, commencing on the inner margin, but scarcely extending to a third of the breadth of the wing; the fringe is intersected with black, and preceded by black dots, which alternate with these marginal marks, and which, in well-marked specimens, are outlined with whitish: the inferior wings have the same intersections and the same dots; they are blackish, but beneath the costa and nervures are covered with eastaneous hairs. The body is castaneous, as well as the antennae, which, as in Pielus in general, are formed of thick triangular joints, and are pubescent at the tips.

#### FAMILY LEPTOSOMIDÆ.

LEPTOSOMA ANNULATUM, Bdv.

Bdv., voy. de l'Astrolab., pl. 5, fig. 9.

Nyctemera Doubledayi, Walk. Cat. Brit. Mus., p. 392.

This New Zealand species is the true *L. annulatum* of M. Boisduval, and Mr. Walker has erred in transferring that name to the species from New Holland, which differs in the patagia being bordered with white as well as the inner margin of the anterior wings; in the yellow fringe, the spots much less extended, the broader yellow abdominal bands, the yellow face, &c.

Thus it is the Australian insect which is unnamed, and I have long designated it in my collection as L. plaqiatum.

I do not know the larva of annulatum, but the chrysalis which Mr. Fereday sent with the moth has (with the cocoon) great analogy with those of our species of Setina.

## NOCTUÉLITES. Trifidæ. FAMILY I. LEUCANIDÆ. Genus Nonagria. Nonagria propria.

Leucania propria, Walk., p. 111, 80.

Mr. Walker says that the collar has a line of small black dots. I find here a continuous black line, edged superiorily by a white dash. He says nothing of the under-side, which is, however, very characteristic, the anterior wings being blackish-grey, and the inferior pale ochreous-white, with a black cellular dot; all with a well-marked series of black terminal dots.

#### NONAGRIA JUNCICOLOR, Guenée, n. s.

Statura conspectusque LEUCANIA. Alæ anticæ pallide testaceæ,

juncicolores, nervulis paulo nigricantibus, serie transversa punctulorum nigricantium, fimbria concolori, absque punctis: posticæ supra subconcolores, subtus pallidiores; omnes subtus immaculatæ, corpore concolori, piloso.

Size of paludicola. All the insect is of the colour of rush or dry reed. Body hairy, uniform, and without spots. Anterior wings oblong, rounded at the hinder margin; the only markings are a series of little blackish-grey dots on the nervures in the place of the elbowed-line, a dot at the apex of the cellule, and sometimes another on the sub-median vein near the base; sometimes the nervures are more or less powdered with grey; fringe concolorous, without dots: inferior wings almost concolorous above, but paler beneath, without markings. Antennae with robust, but small, laminæ. I have only seen the male.

N.B.—It is scarcely possible that this can be *Leucania unica*, Walker, p. 112, in which the anterior wings are without spots, and the abdomen much paler than the thorax.

### FAMILY III. APAMIDÆ.

Genus Alysia, Guenée, nov. gen.

Antennæ of the 3 long, crenulated, each crenulation carrying a tuft of hairs at the tip, and a longer one in the middle; those of the 2 cylindrical, pubescent, each joint carrying two longer hairs. Palpi thick, ascending, robust, hairy; the third joint very distinct, scaly. Haustellum small, robust. Thorax broad, somewhat depressed, quadrate, strongly hairy, but not bristly; breast very hairy. Abdomen of the 3 long, smooth, silky, not crested, laterally hairy, not conical; that of the 2 conical, thick, and hairy. Legs robust; the tarsi with spines. Wings oblong, thick; the superior slightly prolonged at the apex; the inferior sinuated at the hinder margin.

A genus of a very ambiguous aspect, and oscillating between the Leucanidæ, Apamidæ, and Noctuidæ. At first sight it resembles Xylophasia, but the non-crested abdomen, unicolorous palpi, &c., will not permit its being united to that genus. Not knowing the earlier states, and being able to examine only one imperfect female, I place it provisionally after Luperina; but it will not be astonishing if, hereafter, it shall be transferred to another position in the Apamidæ, or even in the Leucanidæ. I direct attention to the structure of the male antennæ.

# ALYSIA SPECIFICA, Guenée, n. s.

Alæ anticæ griseæ, fimbria extima albu spatio medio levissime rubricante, macula reniformi vix conspicua pallidiore, punctis transversis minutis nigricantibus: posticæ pallidiores, subtus fere albidæ, lunula media obscuriore: corpus griseum, immaculatum. 1.

Very large; the female especially, equalling the species of Aplecta in size. All the insect is dusky-grey, powdered with paler scales or hairs, and without any dark spot: the superior wings are oblong, almost toothed at the hinder margin; the fringe concolorous, not preceded by dots, but the extremity is white in fresh individuals; all the markings are very faint, the median and basal spaces only being slightly tinted with pale red, thus showing the elbowed line, which is followed by a series of blackish dots, edged with white, and placed on the nervures; the reniform stigma indicated by some pale scales: the inferior wings paler grey, with slight darker clouds; the under-side is entirely whitish, with a large grey cellular lunule, and traces of a median line. The thorax, head, and palpi uniformly grey, without markings. The ♀ is similar to the male, but much larger.

### · FAMILY V. NOCTUIDÆ.

# Genus Nitocris, Guenée, nov. gen.

Antennæ slender, pointed, simply pubescent in the male. Palpi robust, slightly ascending; the second joint broad, scaly, glossy, spotted with black exteriorly; the third short, but very distinct. Haustellum rather short. Thorax quadrate, scaly, and glossy, with a raised collar; the patagia very short, distant, and ordinarily spotted with black at the extremity. Abdomen not crested, slender in the 3, broad, flattened, and with protruding oviduct in the 2. Legs with spiny tarsi, the spurs long but slender. Wings smooth: superior oblong, almost as broad at the base as at the hind margin, which is rounded; the orbicular stigma very small and punctiform; the reniform becoming eroded inferiorily, and clearly defined on the exterior border, which appears to emit a point beneath; the terminal space broadly pale: the inferior wings marked on the under-side with a broad black spot at the internal angle.

An exclusively Australasian genus. At first sight one would place it in the Apamidæ by the side of Celæna and Mamestra, and I think that Mr. Walker has placed in the latter genus all the species known to him. To my eye they seem true Noctuidæ, related intimately with the genus Noctua by our plecta, which should perhaps be added to them. Perhaps one should thus adopt the generic term Ochropleura of Hübner, that Mr. Walker has used for plecta and its allies.

In order to give a more complete idea of this new genus, I describe here all the species I possess, although they do not all pertain to New Zealand; besides I think it probable that nearly all may be found there.

### NITOCRIS BICOMMA, Guenée.

Mamestra comma, Walker, p. 239, 40 ?.

Alæ anticæ nigro-cinereæ, pulverulentæ, strigis duabus geminis nigris,

1808.]

angulosis, sub-terminalique nigro intus limbata, macula orbicularis testacea, punctiformis; reniformi alba: posticæ cinereæ, fimbria pallida, subtus macula interna diffusa.

Size of Agrotis exclamationis. Superior wings blackish-grey, with the two lines (extra-basal and elbowed) composed each of two distant black threads, forming very evident elbows and angles, especially between the cellule and the sub-median; the subterminal line is scarcely sinuated, shaded on the inner side with black, which colour extends more or less according to the individual, from which emanate small nervural dashes of a still deeper black; the orbicular stigma is very small, either concolorous or of a nut-brown; the reniform stigma is soiled with black below, nut-brown above, edged exteriorily by a white line: inferior wings blackish, with the fringe shining and almost white, save at the internal angle; their under-side dusted with black and with a cellular dash; the large spot at the internal angle much diffused. Thorax obscure, grey, with the first half of the collar darker, and the patagia uniform.

The  $\mathcal{P}$  is darker, almost black, so that all the lines and shades are nearly absorbed.

I think this species is the *comma* of Mr. Walker; but, as that name cannot be retained, it being already employed for a European *Leucania*, I have modified it in the least possible manner. Mr. Walker knew the female only.

# NITOCRIS LIMBOSA, Guenée, n. s.

Statura N. bicommæ, sed paulo minor. Alæ anticæ cinereæ, nigronebulosæ, spatio terminali excepto, lineis undulatis et angulatis nigris interruptis, maculis ordinariis unicoloribus, orbiculari minima, reniformi lineola alba sæpius limbata: posticæ griseæ subtus macula interna quadrata nigra. Thorax cinereus; collari apicibusque humerorum nigris.

This is closely related to bicomma, but smaller; of a paler grey, especially on the terminal space, which is very distinct, because the ground colour is not clouded there, whereas it has a black appearance everywhere else; but the costa, the space between the ordinary lines, and the principal nervures, remain grey; the white thread of the reniform stigma is often prolonged on to the nervure which follows it, which does not occur in bicomma: the inferior wings are paler, almost white, and beneath the spot at the internal angle is very distinct. The colours of the thorax are more marked, and the patagia are especially shorter, more notched exteriorily, and marked with a black spot at the extremity.

The female is altogether similar to the male, or if anything paler rather than darker.

Australia.

### NITOCRIS EXUNDANS, Guenée, n. s.

Statura N. limbosæ. Alæ anticæ porphyreo-brunneæ, nigro-marmoratæ, lineis undatis geminatis nigris, macula orbiculari albo; thorax caputque brunnei.

I know the \$\phi\$ only. Size and shape of \$limbosa\$. Superior wings wood-green, slightly violaceous, mixed with scorched black-brown; the ordinary lines are much less angular, and the space between the elbowed line and the sub-terminal forms a complete violet-black band; the orbicular stigma is white and very apparent; the reniform yellow-brown, with a pinkish tinge, fuller and not bordered with white, at least in my example; a blackish track follows the sub-median; the fringe is concolorous, and is preceded by black dashes; the inferior wings are as in \$limbosa\$. The thorax and the head uniform in colour, wood-brown dusted with black. Palpi flesh-coloured, with the black spot less apparent than in allied species.

Australia.

# NITOCRIS NUNA, Guenée, n. s.

Alæ anticæ griseo-violaceæ, costa limboque pallidioribus, strigis angulosis nigris, macula reniformi albida arctata, lineam bifuscatam longitudinalem jungente, collari in medio albo-maculato.

Slightly smaller than the species which precede. Superior wings blackish-grey, violaceous, with the costa and the terminal space paler; ordinary lines black, sinuated and angulated; sub-terminal simply waved, and preceded by small black nerval dashes; all the cellule is filled in with black, in which are seen the two ordinary stigmata, in colour dirty white; the orbicular extremely small; the reniform much narrowed above, connected beneath with a nervure of the same colour forked at its extremity; all this divided in the middle by a greyish-violet dash; a black trace in the ordinary place of the basal line: inferior wings grey, paler at the base; their under-side almost white, with the cellular lunule, and the spot at the internal angle, black. Thorax blackish-grey, violaceous, uniform, with a white space on the middle of the collar on the upper-side of the head.

Australia; one 3.

# NITOCRIS EPIPLECTA, Guenée, n. s.

Ochropleura roristigma, Walker, p. 409, 8??.

Statura affinitasque, N. plectæ. Alæ anticæ violaceo-nigricantes, lituris duabus basalibus albidis nigro adumbratis, costa albida, cellula longe nigra, punctum orbicularem album, renigeramque dimidio albidam includente. Thorax griseus; scapulis violaceo-nigris.

It resembles our Noctua plecta. Superior wings dull violet-black, the terminal space paler, and the base whitish violet-coloured, divided into three markings by deep black, firstly in the cellule, afterwards by a dash below the median vein, and lastly by a smaller one beneath the sub-median; the two ordinary spots yellowish-white; the orbicular punctiform strongly conspicuous in the black cellule; the reniform divided by a brown dash, and filled in with brown inferiorily, and rests on the median vein; some black dashes indicate the upper portion of the subterminal line; the inner margin is yellowish-white, as in our A. empyrea: inferior wings white, soiled with grey, especially on the hinder margin; beneath with the lumule and the spot strongly marked. Thorax whitish-violet, with the patagia and the anterior part of the collar deep shining black.

Swan River; one 3.

#### NOTES ON SOME BRITISH SYRPHI.

#### BY G. H. VERRALL.

Amongst the *Diptera* I collected last year, I have found five species of *Syrphus* to which I wish to call attention. I cannot call them new to England, as most of them occur in any collection, but none are recorded as species in Walker's "Diptera Britannica." They are, certainly, all allied to other acknowledged British species.

Under S. auricollis, Meig., occur the true species of that name, and maculicornis, Zett.; the latter may be at once distinguished by the abdominal bands being entirely interrupted, whilst in auricollis they are only deeply notched on the hinder edge. Both the species occur in gardens near London, maculicornis being much the commoner.

Under *umbellatarum*, Fab., may also commonly be found *lasiophthalmus*, Zett., which has slightly hairy eyes in the male, and also has the abdominal spots and epistoma yellower. The epistomal middle line is also more distinct, and the whole insect rather more hairy.

Under cinctus, Fall., I think it most probable we have none of the true species, but only cinctellus, Zett. Walker certainly, amongst his varieties of cinctus, gives both species, but I have never yet seen the true form. Cinctellus has the antennæ brown above, a black spot on the front just above the antennæ, and the scutellum clothed with brownish hairs. Should any entomologist find specimens with wholly yellow antennæ, no black spot above them, and the scutellum clothed with yellow hairs, he has the true cinctus, for which I should be much obliged. Cinctellus is common.

Under vitripennis, Meig., or ribesii, Linn, is occasionally to be found nitidicollis, Meig., which may be known by its having a brightly shining thorax, and the epistoma (? generally) partly black. This insect has also a handsomer appearance than its allies, probably from its pubescence being darker. I believe it is rather rare; it has been recorded as British by Stephens and Curtis.

Under albostriatus, Fall., is also confusus, Egger, if the latter can be considered a separate species. Schiner confesses that a character taken from the colour of the legs of a Syrphus is a very uncertain one, but says that among a large number of specimens of these two species he can find no tendency to vary. They differ only as follows: Albostriatus has the femora of the four front legs black at the base, a cethe hind legs with a broad blackish ring, and also a small dark ewood the hind tibiæ. Confusus has the same parts wholly yellow, ants of

exception of the hind femora, which have only a narrow, distinctly marked ring. I have very poor material to work upon, having only one of each. They, however, agree exactly with the above distinctions.

The above remarks show a little of what remains to be done among even the larger species of *Diptera*; and it seems to me that the Entomological Society can scarcely hope to be able to publish a satisfactory catalogue of them within some years, unless more workers appear on the field.

The Mulberries, Denmark Hill, S., 8th May, 1868.

ON TWO NEW SPECIES OF LAMELLICORN BEETLES (RUTELIDÆ)
FROM N. AUSTRALIA.

BY CHARLES O. WATERHOUSE.

### Anoplognathus.

A. ÆNEUS, sp. nov.

Ovatus, convexus, nitidus, supra æneus; clypeo sat densè, capite parcè, punctatis; thorace disco parcè, latera versus gradatim fortius densiusque punctato; scutello lævi, elytris ad scutellum parcè, latera versus gradatim fortius punctatis. Subtus cupreus, sat densè albopubescens.

Long. 15½ lin., lat. 9 lin.

Above glossy, æneous. Head sparingly but distinctly punctured; clypeus somewhat thickly punctured, the angles much rounded, the margin scarcely reflexed. Thorax convex, broadest behind, gradually contracted in front, the sides gently rounded, the extreme margins thickened, the posterior margin reflexed, except near the scutellum; the whole surface of the thorax punctured, the punctures small on the disc, become larger and deeper towards the sides. Scutellum with only a few small punctures near the base.

Elytra convex, gradually increasing in width towards the posterior two-thirds, rounded posteriorly; suture smooth; extreme lateral margins coppery, incrassated, especially immediately below the shoulders.

The punctures on the elytra are small near the scutellum, but gradually increase in size and depth towards the margins; the shoulders and apical callosities very delicately punctured.

Pygidium coarsely punctured, very sparingly covered with white ir. Under-side coppery, clothed with white pubescence, the central f the abdomen less densely covered.

's insect, which, from the outer claw of the anterior tarsus being

1868.]

bifid, I believe to be a female, must be placed next to Calloödes, although in some respects it slightly resembles  $A.\ viridi-eneus,\ \varsigma$ .

Brit. Mus.

Hab. N.E. Australia (Rockingham Bay); collected by E. D. Atkinson, Esq.

CALLOÖDES, White,

Ann. and Mag. of Nat. Hist., XV, p. 38.

C. ATKINSONII, sp. nov.

Viridis, nitidus, ovatus, sub-depressus; clypeo antice, thoracis lateribus, elytrorumque marginibus testaceo micantibus; pedibus cæruleo-viridibus, nitidis.

Long. 9—10 lin., lat. 5 lin.

Above glossy, green. Head distinctly but not very thickly punctured; clypeus truncate in front with the angles rounded, the anterior margin reflexed, shining with testaceous. Antennæ glossy, brown.

Thorax contracted in front, green, very sparingly and delicately punctulate, the sides reflecting testaceous, the extreme margin thickened; the hind margin of the thorax reflexed, except the central portion. Elytra broadest immediately below the shoulders, narrowing towards the apex, moderately thickly punctulate, except at the extreme margins and the suture, which are smooth. The margins of the elytra thickened except at the basal portion. The elytra are slightly debiscent at the extreme apex, which in each elytron is slightly produced. Pygidium acuminate, rugosely punctured, and clothed with short white hair. Under-side shining with aneous and fuscous, more or less covered with white pubescence, except on the sternum and central part of the abdomen. Legs dark green, glossy; the four posterior tibiae with a few large punctures on the outside.

Brit. Mus.

Hab. N.E. Australia (Rockingham Bay); collected by E. D. Atkinson, Esq., after whom I have named the species.

British Museum, May 13th, 1868.

ECIES OF TRICHOPTERYGIA NEW TO THE BRITISH LIST.

BY THE REV. A. MATTHEWS, M.A.

e season of 1867 proved that our indigenous Trichopterygia are yet thoroughly worked out; and also proved, if proof had been required, the singular eccentricity of their distribution. In Sherwood Forest I met with two species hitherto only known as inhabitants of

) (June,

Madeira, and the Canary Islands, viz., *T. obscæna*, Wollaston, and *T. anthracina*, Matthews, of the latter of which I was lucky enough to find many specimens, though of the former I obtained but one. *T. anthracina* is a distinct and well-marked species; it belongs to the first division of the genus, which comprises *T. atomaria*, and others, whose thorax is much dilated at the base, with its posterior angles produced beyond the shoulders of the elytra; but from all these it may be easily known by its small size, deep black colour, and short black antennæ.

T. obscæna belongs to a group of which T. Guerinii may be considered the type, and all of which have pale or rufescent elytra, and the thorax scarcely dilated at the base. In noticing this species I must apologize to Mr. Wollaston for having formerly led him into error. When, some years ago, he kindly sent me his specimen of T. obscæna for examination, I returned it to him with the observation, that I did not consider it distinct from T. Guerinii; and, in consequence of this advice, Mr. Wollaston has since quoted his obscæna as a synonym of Guerinii.

At the period alluded to I was just entering upon the arduous, and then almost hopeless, task of separating the confused mass of insects which had already poured in upon me from all quarters of the world, and I naturally felt anxious to avoid all unnecessary separation of species; but I soon discovered that it would be impossible to adhere to such a system, and that the only method of arriving at any thing like a true classification would be to follow the example of Col. Motschulsky, and to divide wherever persistent characters could be observed sufficient to justify a division. I found also that one of the most distinctive specific characters exist in the superficial sculpture; for, where this proves to be identical, every other mark, such as shape and colour, will always agree as a natural sequence.

When I mounted the specimen I had taken at Sherwood, I was much struck by the appearance of its sculpture; this led to further examination, and I found that, though differing from Guerinii, it coincided exactly in this respect with obscana, and that both also differed from Guerinii in the comparative length of the clytra, and a few other points of minor importance. I therefore feel no doubt that obscana is distinct from Guerinii, and that Mr. Wollaston's name must be restored to the species.

A third species new to our list (also from Sherwood Forest) is an extremely pretty *Ptilium*, allied to *Pt. angulicolle*, but easily distinguished by two deep converging lateral lines on the thorax, which is nearly destitute of any central channel. It was found by Mrs. Matthews

1568.]

under the bark of a dead oak tree, and seems to be very rare, for, though we carefully examined the greater part of the same tree, we were unable to find a second specimen.

In my present notice I shall only give a summary of the characters of these species, as the time must soon arrive when they will be described at greater length. To them I will also add the diagnostic characters of a genus, which I have separated from Ptilium, to contain the following species, viz., Pt. transversale, Erichson, Pt. concolor, Sharp, and Pt. coarctatum, Haliday; these all differ widely from Ptilium in every anatomical detail; the most obvious distinction exists in the base of the thorax, which is not, as in the true Ptilia, fitted to the shoulders of the elytra, but overlaps and lies upon them, so as partly to conceal the scutellum. It is not unlikely that the name of the last of these three, Act. coarctatum, will have to be altered; in 1855 Mr. Haliday described this species, in the Dublin Natural History Review, p. 124, under the name of Ptilium coarctatum, and in the same year, M. Thomson described it, in the Öfvers. af Vet. Acad. Förhl., p. 339, under the name of Ptilium elongatum; the priority must therefore be determined by the month of publication, and this I have not yet been able to ascertain: that the names are merely synonyms of a single species there can be no doubt, for M. Thomson has very kindly sent me his unique example of elongatum for comparison, and it is specifically identical with Mr. Haliday's type of coarctatum.

This species is another remarkable instance of eccentric distribution; it was discovered almost simultaneously by Mr. Haliday in Ireland, and M. Thomson in Sweden, and has subsequently been taken by M. Aubé on the shore of the south of France, and by Col. Motschulsky in Egypt. As I have made this species the type of the new genus, I have termed the latter *Actidium*, in reference to its habits; its allies, though not strictly littoral, are found among sand and gravel on the margins of rivers and lakes.

TRICHOPTERYX ANTHRACINA, Matthews, Ent. Mo. Mag., ii, 35, 1865.

L. c. 6-7/16. In. Ovata, maribus postice valde attenuata, valde convexa, nigra, nitida, pilis brevibus argenteis parce vestita, capite modico, antice elongato, oculis sat magnis, prominulis; pronoto modico, valde convexo, postice dilatato, tuberculis sat magnis, ordinibus irregulariter sinuatis confertim dispositis, interstitiis nitidis, subtiliter reticulatis,

ornato, lateribus rotundatis, late marginatis, angulis posterioribus valde productis, acutissimis; elytris longioribus, maribus valde attenuatis, ordinibus sat remotis, sinuatis, modice asperatis, lateribus fere rectis, leviter marginatis, apicibus vix dilutioribus, vix rotundatis; pedibus læte flavis; antennis brevioribus, piceo-nigris.

# TRICHOPTERYX OBSCÆNA, Wollaston.

Acrotrichis obscana, Woll., Cat. Mad. Col., p. 35, 1857.

L. c. 6-7/16. lin. Oblonga, elongata, valde convexa, capite atque pronoto nigris, elytris nigro-castaneis, pilis brevibus flavescentibus parce vestita, capite magno, sat elongato, prominulo, oculis vix prominentibus; pronoto modico, postice vix dilatato, tuberculis sat magnis, ordinibus interruptis dispositis, interstitiis nitidis, confertim reticulatis ornato, lateribus levissime marginatis, leviter rotundatis, angulis posterioribus acutis, vix productis; elytris brevioribus, quadratis, haud attenuatis, ordinibus transversis, interruptis, sat profunde asperatis, suturâ elevatâ, apicibus valde rotundatis; antennis brevioribus, nigropiceis; pedibus flavis.

# PTILIUM HALIDAII, sp. nov.

L. c. 5-6-6 lin. Elongato-ovale, gracile, valde convexum, læte castaneum, nitidum, pilis brevissimis pallidis sparse vestitum, capite modico, sat elongato, punctis foveolatis profunde impresso, oculis haud prominentibus; pronoto parvo, brevi, capite vix longiori, aut latiori, profunde foveolato-punctato, antice lineà mediali, valde indistinctà, ad medium haud extensà, postice lineis duabus lateralibus, profunde impressis, ultra medium extensis, atque antice convergentibus, notato, lateribus ad basim fortiter constrictis, angulis posterioribus sat acutis, prominentibus; elytris sat longis, angustis, ordinibus densis, transversis, sat profunde asperatis, ante medium latissimis; pedibus atque antennis læte flavis.

# ACTIDIUM, gen. nov.

# Characteres diagnostici.

Antennæ 11-articulatæ, articulo 3<sup>tio</sup> ad basim valde incrassato, 9<sup>no</sup> vix incrassato.

Palpi maxillares 4-articulati, sat parvi, articulo ultimo aciculari, brevi, fortiter bisinuato, penultimo oviformi, apice extremo truncato.

Palpi labiales 4-articulati, sat breves, articulo basali valde incrassato,

penultimo profunde bifido, apicibus acutissimis, ultimo exiguo, conico, acutissimo.

- Lingua magna, palpis longior, ac multo latior, truncato-conica, apice minute bidentato.
- Paraglossæ modicæ, apicibus obtusis.
- Mandibulæ sat magnæ, robustæ, vix uncinatæ, acie sinuatâ, leviter excavatâ, angulo præbasali fere obsoleto, dorso fortiter denticulato.
- Maxillæ modicæ, trilobatæ, lobo exteriori sat gracili, incurvato; intermedio modico, 4-articulato, articulo ultimo sat lato, longe ciliato,
  aut potius pectinato; interiori sat magno, cultriformi, dentibus
  quatuor validis, acutissimis, fortiter curvatis, ad apicem armato.
- Mentum magnum, sub-quadratum, lateribus profunde bisinuatis, angulis productis, setâ unicâ apicali utrinque instructum.
- Caput sat magnum, sat porrectum.
- Pronotum parvum, ad basim valde contractum, basi humeris elytrorum incumbenti.
- Elytra longa, integra, epipleuris latis.
- Prosternum modicum, receptaculis coxarum marginalibus, semi-excisis, atque confluentibus.
- Mesosternum parvum, late carinatum, carinâ triangulari, postice acuminatâ, basi ad collum extensâ, epimeris subtus sat longe inflexis.
- Metasternum longum, quadratum, inter coxas breviter productum, apice excavato, angulis productis, acutissimis.
- Coxæ anteriores contingentes.
  - intermediæ haud contingentes, obliquæ.
  - posteriores breviter remotæ, sat parvæ, vix productæ, margine exteriori sinuatâ, ad apicem levissime laminatâ.
- Pedes robusti, femoribus ad apices angustissime laminatis; tibiis valde dilatatis; tarsis perbrevibus, triarticulatis, articulis basalibus incrassatis.

Sp. typica, Act. Coarctatum, Haliday.

(syn.) Pt. elongatum, Thoms.
filiforme, Aubé.

# NOTES ON COLLECTING, MANAGEMENT, &c., (LEPIDOPTERA).

BY H. G. KNAGGS, M.D., F.L.S.

#### THE CATERPILLAR STATE.

(Continued from Vol. iii., page 41.)

#### MANAGEMENT.

With the exception of those mysterious maladies, muscardine and cholerine, concerning which untold volumes have been written, with the minimum of practical result, the ailments of larvæ have been so little studied that, were it not that the subject of "Management" seems to demand that attention at least should be called to them, I would prefer to omit them altogether from these notes.

Direct injuries, such as mutilations, wounds, bruises, &c., resulting from accidents, bites of other larvæ, attacks of enemies, unlucky knocks by the beating stick, or otherwise received, are not necessarily fatal, and to the lovers of malformations, may even be productive of cherishable abnormities in the future imago. We can do little more than leave them to take their chance, placing them out of the way of further harm, and stopping the flow of exuding lymph by the application of powdered chalk to the wound, but of course the scab formed afterwards will interfere with the next moult, so that whenever that event comes about, the larva (if worth saving) may be assisted by means of warm moisture and the mechanical measures mentioned further on under "moulting sickness."

Stings of Ichneumons, &c., come next, and when the eggs of the parasites are not too deeply deposited, and of course before they have hatched, it is often no difficult job to destroy them either by crushing them with finely pointed scissors or pliers, or removing them by the aid of a darning needle, it being sometimes necessary to steady the larva by holding it gently between the finger and thumb of the free hand; but I see no reason why the subject (especially if it be of an irritable temperament) should not be placed under the influence of pure (not methylated) chloroform, since larvae are readily affected by, and readily recover from the effects of, this agent.

Frost bite. It has been stated that larvæ, which have been so stiffly frozen that they might have been easily broken, have been known to recover. The chief thing to be remembered in the treatment of such cases is that the thawing should be effected very gradually—rapid thawing being dangerous; the best thing I can suggest is to cover them up in snow; we should remember that prevention is better than cure, and that the larvæ of species which naturally inhabit warm situations cannot bear and ought to be protected from any great degree of frost.

Suffocation. This of course happens whenever the passage of air through the spiracles becomes obstructed, the most common cause being submersion, for larvæ have an unaccountable propensity to commit suicide in the water vessels of breeding cages whenever they can get a chance; still after being immersed for even ten or twelve hours, their case is not utterly hopeless, for though they may appear bloated and stiffened with water, yet if they be dried gently on a piece of blotting paper, keeping them in motion the while, and exposing them to the sun, the chances are that, if they be not too far gone, they will recover; and, for aught

1868.1

-15

I know to the contrary, the school-boy's old remedy of resuscitating drowned flies by covering them up with salt and exposing them to the rays of the sun might prove effective, only I have my doubts as to the effect of damp salt on larval surfaces.

Starvation. This may depend on defective supply of food, or the use of an improper diet, or the presence of excess or deficiency of light, as the case may be, may cause the subject of it to sulk and pine away. The treatment is, generally speaking, obvious enough, but sometimes we find larvæ feeding well enough for a time on some particular kind of food, and then unaccountably falling off their appetite; under such circumstances change of diet should be tried, ventilation, &c., should be attended to, light (and even in some cases, rays of the sun) should be admitted; rinsing the food in fresh water, or exposing it to a shower of rain: and as many larvæ have a predilection for sweets, the food may be washed with syrup and allowed to dry, or sugar or treacle may be added to the contents of the water vessel with a view to imparting a flavour to the food; in the latter case, however, we must be careful that the mixture become not mouldy or acetous.

Surfeit. Many larvæ, especially such as are large and smooth, when permitted to gorge themselves with too juicy food, have a tendency, particularly when about three-quarters grown, to become dropsical and die. The remedy would appear to be to feed them on dry mature leaves gathered from bleak exposed situations, and moisture should be excluded from the cage.

Cramp. A night passed on a cold surface is often sufficient to paralyse the pro-legs of larvae, especially of such as are young and tender; under these circumstances they are unable to retain their hold when placed upon their food: perhaps the best plan is to put them on some such surface as a piece of blotting paper, in a temperate situation, fresh leaves of the food-plant being strewn about within reach of the sufferer.

Low Fever. Undoubtedly larvæ suffer from a contagious disease very analogous to this. Some species are more liable to it than others, and it appears to be very fatal among the members of any affected batch, though apparently not communicable from one to another, and distinct, species. It is doubtless engendered by bad feeding, ill ventilation, proximity of decaying vegetable or animal matter, &c.; the indications therefore are that these should be removed as early as possible, and the healthy larvæ should be kept separate from those which show the slightest signs of the disease. The use of a small quantity of Condy's disinfecting fluid in the water vessel, too, could do no possible harm, and might prove beneficial. Somebody has suggested that immersion in cold water has a beneficial effect in this disorder.

Irritability. Some larvæ are naturally of a waspish, irritable disposition, biting and striking violently at anything or any other larvæ which may cross their path or come in contact with them; others become ill-tempered during, and for a short time after, their moults, when the skin appears to be very sensitive; or this irritable state may be due to the recent sting of ichneumons, the presence of acari, &c., requiring our attention. Larvæ thus affected should be kept as little crowded as possible, and, indeed, if necessary, confined in separate cages.

Moulting Sickness. Larvæ of some species, even in confinement, appear to experience but little difficulty in casting off their effete skins; others, on the contrary, and of these chiefly those of the Butterflies, Sphinges, Bombyces, and Pseudo-bombyces, apparently naturally undergo a comparatively tedious and painful process of ecdysis; the appetite of the caterpillar thus affected leaves it, it frequently seeks some retired spot, and having spun a fewer or greater number of silken threads, attaches the hooks of the pro-legs thereto, and then, after the lapse of a longer or shorter interval, bursts the now useless covering which invests it, and makes its exit. During all this the larva should, as a rule, be left to its own resources, but sometimes it may be observed that it is incapable of freeing itself, in which case assistance must be rendered before prostration takes place, by slitting the old skin with a couple of needles carefully manipulated, cutting, by very fine pointed scissors, the skin round any scab which may have been formed over a wound, and pegging down the skin in cases where the pro-legs may have become detached from the transverse silken threads, assisting meanwhile the operation by moisture and warmth. It is very important to discriminate between the above sickness and cases of starvation, since the treatment required in the latter case is necessarily converse of the above, and a conclusion respecting this may safely be arrived at by attention to the following :- In the starved larva the capital segment is comparatively of hydrocephalic proportions-it is, in the moulting larva, very small, the skin is plump and tense in the latter, while that of the former hangs loosely; the silken transverse threads too are absent in the victim of starvation. which also exhibits a restless desperation in searching for food to appease its hunger, sometimes snapping at pieces of frass and other substances, and as hastily casting them aside, the moulting larva, on the other hand, remains stationary.

Diarrheea. This is generally caused by improper feeding with too juicy or too relaxing food; in such cases, dry stunted foliage gathered from bleak exposed situations, mature leaves, astringents, such as dark-coloured oak leaves, madder, &c., should be tried with such larve as will partake of them, or the food may be sprinkled with powdered madder, chalk, &c. The converse of this complaint requires to be treated with the young, juicy, immature leaves of the food-plant, and, in certain cases, mostly among the Noctue, the administration of lettuce and other natural purgatives will have a salutary effect.

Fungus. This is particularly apt to attack hairy larvæ, especially such as hybernate, the subject—having doubtless first become unhealthy from confinement in a damp, ill-ventilated atmosphere—is attacked by a species of öidium, after which it is generally "all up." I do not know how far the use of hyposulphurous acid or the hyposulphites might be applicable, but their effect might be tried. The natural preventive is, doubtless, exposure to the sun's rays, and most collectors must have noticed that the hybernating larvæ of Arctia, Spilosoma, and others, take every opportunity of sunning themselves, as if for the purpose of drying their coats; when there is no sun visible, currents of dry air will, probably, be the best remedy.

# Soils, &c., for the use of Larvæ about to change to Pupæ.

Considerable diversity of opinion, respecting the substances, mixtures, &c., best adapted for this purpose, exists among Entomologists—probably at one time

1868.]

one is preferable, at another another; that which is most suitable for one species may be objectionable in the case of others. In selecting our soil we should be guided by the natural habits of the species for whose benefit we are cogitating, the nature of the soil which it naturally inhabits, the position, wet, dry, hot, cold, east, west, south, &c., which it naturally selects for its transformation. For the rest I must leave the choice to the reader, merely contenting myself with an enumeration of the most approved kinds: leaf-mould-sand, silver-sand, or "ballast," the latter is however apt to "cake"-loam-the rubbish from the roots of oaks and forest trees, rotten wood, bran, cocoa-nut fibre-birch catkins (rubbed between the hands into light flakes) or combinations of two or more of them. All soils should be first well baked to destroy animal life (such as acari, slugs, eggs of larvae of Tinea, spiders, wire worms, &c.), they should then be placed in closely fastened canvass bags, damped, and kept in a moist situation until required for use. Where it is required to keep up a certain degree of moisture, the soil should be covered with damped moss or a layer of cocoa-nut fibre, the latter being a capital means of preventing the soil beneath from becoming too dry.

For such larvæ as spin up, the most approved appliances have been already noted under the heading "cages."

(To be continued.)

Note on Agabus affinis, Payk.—In this month's "Entomologist" Mr. G. R. Crotch has published a most interesting list of certain of Thomson's additions to the Swedish Fanna, accompanied by a few remarks which, while indicating a great deal of research, are far too concise for those who like Entomology made easy. Among them is one to the effect that all Mr. Crotch's examples of Agabus affinis belong to the newly-described Eriglenus unquiendaris of Thomson. I had within the last few weeks examined my Hydradephaga with the assistance of Schaumi's recently published posthumous work, and had, satisfactorily enough, considered all my British examples of Agabus affinis as the affinis of that author.

I have, however, just captured four specimens of an Agabus so closely resembling my series of affinis that only an educated eye would notice any difference of facies; and, on consulting Thomson's work, I have satisfied myself that these four specimens are to be referred to his Gaurodytes affinis, while all my other specimens must, like Mr. Crotch's, be considered Eriglemus unguiculuris.

I hope the following characters may help entomologists to distinguish the two insects. Being of about the same size, A. affinis is rather narrower in proportion to its size than A. unguicularis; it is of a more parallel form (the sides of the thorax behind, and the sides of the elytra, being straiter and less rounded), the large punctures on the elytra are more evident towards the base in affinis, and there is some (though not a very considerable) difference in the shape of the lacinize of the metasternum. Besides these characters pointed out by Thomson, which are certainly not very easy to appreciate, my specimens show another by which the species can readily be distinguished, viz., that the broad turned-under margin of the base of the clytra is of a rather obscure red in unguicularis, while it is quite black in affinis. I should add, that affinis is altogether of a darker and blacker colour than the brassy-black unguicularis. Closely allied as these two insects are,

18 [June,

it will be noticed from my remarks that Thomson places them in different genera,—
Eriglenus and Gaurodytes. These genera (as Schaum remarks) most certainly cannot be retained, being founded only on the differences in the shape of the laciniae of the metasternum. Now, if A. guttatus and femoralis be examined, it will be found their difference in this respect is very evident, but the shape of the lacine varies in the other species, and in Agabus affinis is pretty nearly intermediate. The structure of the claws in the males of affinis and unguicularis is similar; and is correctly enough described by Schaum in his description of A. affinis; and incorrectly by Thomson in the descriptions of the two species. I should add that Schaum's description of A. affinis (Ins. Deutsch., i, ii, p. 110) refers without doubt to the species I am inclined to consider Thomson's unguicularis. Affinis is one of Paykull's species, and Thomson is therefore likely to be right in his identification of it. In this case the synonymy will be as follows:—

- 1. Agabus (Eriglenus) unquicularis, Th., Sk. Col., ix, p. 101.
  - ,, affinis, Schaum (and of British collections).
- ,, affinis, Payk., Th. (Gaurodytes).

-D. SHARP, Thornhill, Dumfries, May 6th, 1868.

Notes on the British species of Malthodes .- Till Herr von Kiesenwetter undertook the revision of the European species of Malthodes, that genus was one of the most neglected; this arose principally from the fact that the different species composing it greatly resemble one another, and consequently are difficult to distinguish. Kiesenwetter, by examining the structure of the abdominal segments in the male, has discovered and pointed out characteristics which serve readily to separate the different species, as far at least as the males go; the females are still most difficult to determine with certainty, and the one fact that they differ sometimes very considerably from their males, added to the other that three or four species often occur together, does not diminish the difficulty. Indeed I scarcely can understand how Kiesenwetter or any other entomologist could have accomplished the task satisfactorily, had the males been without well-marked characters, as is the case with the very closely allied genus Malthinus. It must be added that the structure of the terminal segments in the males is subject to little or no variation, and is of so marked a character as to leave no room for doubting the distinctness of the species. The following list of our species will probably prove to be incomplete, but is, I think, the best that can be now given :-

 minimus, Linn., Fall., Kies. sanguinolentus, Wat. Cat.

Common in woods and plantations all over the country.

2. biguttatus, Linn., Thomson.

\*marginatus, Latr., Kies., Wat. Cat.

Generally distributed and common.

<sup>\*</sup> Kiesenwetter cites ('antharis biguttata of Linnæus under the head of Matthinus biguttula, Panz. Of course, if the Linnæan description really does apply to the species known as biguttula, Panz., Kiesenwetter should have adopted the Linnæan name for that species in place of Panzer's more recent one,

- pellucidus, Kies. Occurs in the birch woods of the Highlands, Rannoch, &c.;
   abundant in Strathcannich, Invernesshire.
- mysticus, Kies. Discovered by Mr. Bold in Northumberland; Galloway and Strathcannich, rare.
- 5. guttifer, Kies. Rare, Galloway, Strathcannich, Garelochead.
- dispar, Germ. Sparingly both in England and Scotland; Weybridge, Cambridge, Galloway.
- flavoguttatus, Kies. Galloway and Beauly in Invernesshire; occurs likewise, I believe, in Cornwall.
- misellus, Kies. The only locality for this species at present is, I believe, Dumfries, where I found half-a-dozen specimens in May, last year; all were males.
- fibulatus, Kies. Introduced into Mr. Crotch's Catalogue on the authority of specimens found by Mr. Wollaston at Withington. I have captured it myself at Eastbank, near Edinburgh.
- 10. atomus, Thoms.

brevicollis, Kies., Wat Cat.

Tolerably common both in England and Scotland. A very considerable fact with respect to this species is the disparity in the number of the sexes. Kiesenwetter says that though he has examined hundreds of females he has seen but three males, one of which was taken in copulá with a female. I have myself seen several scores of the female found in this country, but only a single male; this was taken by Dr. Power (near London, I believe).

The above 10 species comprise all the Malthodes I am able to speak of with certainty as found in this country. In Mr. Crotch's Catalogue there is included one, M. nigellus, Kies. (= brevicollis, Fk.), of which I have made no mention, the unique specimen on which it was introduced having been unfortunately destroyed, so that all I can do is to call attention to the fact that this species is not improbably to be found in Britain. In Dr. Power's collection are specimens of a species closely allied to atomus, Th.; they are all females, and I am therefore unable to say whether they are a distinct species or merely a variety of atomus. In the collections of Messrs Rye and Crotch are specimens of the female of a species of this genus, with which I am unacquainted, unless they should prove to be the female of M. misellus, a species only taken once in this country, and of which all the specimens then found were, as I have stated above, males.—ID.

Capture of Lithocharis maritima near South Shields.—I have in my collection two specimens of Lithocharis maritima, Aubé (castanea, Wat. Cat.), which I took on the sands, near South Shields, in May.—Thos. Jno. Bold, Long Benton, Newcastle-on Tyne, May 12th, 1868.

Note on Aphodius nemoralis and A. constans.—I have a specimen of Aphodius nemoralis, Er., which was taken near Elgin, Morayshire; and a fine male of Aphodius constans, Duft., found by myself, on the sea-coast, a little to the north of Whitley, Northumberland, in April.—ID.

20 (June.

Curious locality for Ischnomera melanura.—This insect is now taken occasionally out of the floor of a calenderer's shop here; which floor is constructed of octagonal blocks of wood, once forming the pavement of St. Ann's Square in this city of smoke, and which were taken up about twenty years ago and sold by the Corporation. I should never have thought of such a locality for it.—T. MORLEY, 29, John Street, Pendleton, Manchester, April, 1868.

Note on Bruchus pisi.—Mr. C. G. Barrett, of Haslemere, has sent me several specimens of this insect, which, though acknowledged to be an introduced species, cannot be very generally distributed in England, as I have never seen a live specimen before. It is readily separable from the common B. rufimanus by the red colour on its middle legs, its silvery pygidium with two black spots, &c. Mr. Barrett notices that some of the peas in which he found the beetles (and which were bought at Guildford, and at first believed to have been grown in Essex,—though further enquiry throws the suspicion of a possibility of Canadian origin upon them) had a covering of skin still remaining over the round hole wherein the Bruchus was ensconced; showing that each beetle must have fed up in a single pea, and not have commenced from the outside. Considering the bulk of the insect, Mr. Barrett remarks, with reason, that this amount of food seems very small.—E. C. Ryf., 7, Park Field, Putney, S.W.

Note on the habits of Hylesinus.—H. framini is now busy depositing eggs in an old ash-tree here. The beetles bore into the deeper bark and then drive a transverse gallery, branching from the entrance about equally in opposite directions. In each gallery there are invariably two of the beetle, which, from their difference in size (for I can see no other character), I suspect are male and female. Eggs are laid in both branches of the gallery; and there is sometimes a beetle in each branch, though sometimes both are in one. Out of some scores (I may say hundreds), I have never found either one beetle or three beetles in a gallery. In the same tree I found one gallery of H. crenatus, also containing two beetles, apparently male and female. The pretty little H. vittatus abounds here in bark of a wych-elm.—T. Algernon Chapman, Abergavenny, 7th May, 1868.

Capture of Deleaster dichrōus.—I have had the pleasure within the last fortnight of taking about 40 examples of this, I believe, hitherto esteemed rare Staph. It is to be found flying between the hours of five and seven o'clock in the evening, and is, no doubt, where it occurs, exceedingly common; as at Croydon, where I took my specimens on two occasions, with an interval of a week between each, their numbers seemed not to have diminished. The mode I adopted was to stand in one place facing the sun, and watch them come sailing gently along. A net was not required, as I could catch them in my hat (once to the terror of a horse). As soon as the eye gets used to their flight, they are readily to be separated from the numerous other creatures on the wing at the same time, such as the small Labia, &c. Of course the weather must be bright, and not a breath of wind stirring.—

John Scott, 23, Manor Park, Lee, Lewisham, S.E., 12th May, 1868.

Capture of Deleaster dichröus.—I have recently taken several specimens of this beetle flying about my window here in the evening.—T. G. Bishop, 22, Thurston Road, Lewisham, S.E., 13th May, 1868.

Note on Crasus septentrionalis.—In September of last year our alder bushes were defoliated by the larva of a saw-fly, the leaves being completely eaten, with the exception of the mid-ribs. The larva, on being approached, assumed a menacing aspect by raising their tails. They were similar in colour to the well-known pest of our gooseberry- and currant-trees, though larger in size. I picked off about a score, and placed them with their food-plants under a bell-glass on a flower-pot. They soon burrowed into the soil, and in the course of a month or so had spun their pupa-cases. These are brown, felt-like, exteriorly glazed, of lighter brown interiorly. The black spotting of the larva is retained in the pupa, so that it looks like a shrunk larva throughout its pupahood. The imago began to emerge about the close of April, just as the alders were beginning to leaf. I naturally expected Hemichroo alni, but it proves to be Crossus septentrionalis.—Peter Incheald, The Lodge, Hovingham, near York,

Note on the currant-gall on Salix herbacea.—Last summer, in July, I found on the very summit of Grassmoor, looking down on Crannock Lake and Buttermere, a pretty little willow, Salix herbacea, that clings closely to the bare top of the mountain, rooting itself firmly among the stones, and throwing up here and there its little floss-covered catkins. The leaves of this willow are round, or nearly so, and shining. The gall is formed on the mid-rib of the small leaves, and is about the size of a red-currant. I picked several of these galls and put them in my botany-box. By degrees the leaves withered and the galls turned brown. They were placed in a glass-topped box and occasionally moistened, and left thus till spring. I had little hope of rearing the tenant, having previously failed. April came, however, and one of the gall-insects emerged in the form of a small saw-fly, black, with pale legs. On opening another of the galls I found the pupa of a second insect ready to emerge. Thus another of Nature's secrets is revealed.—ID.

\*\*\* Mr. Inchbald has kindly placed the saw-fly in my hands. It is a small species of Nematus, but I am uncertain if it have been described. The late Mr. Armistead had also found the gall, but, I believe, had not reared the insect.—R. McLachlan.

A list of Eupithecia taken in Derby and the neighbourhood; with notes.—It may be interesting to some of your readers to know the number of "Pugs" that I have taken in this locality. The following were, with one or two exceptions, taken in the larva state:—E. venosata, in seeds of Silene inflata, July; E. linariata, in seeds of Linaria vulgaris, July and August; E. pulchellata, in flowers of Foxglove, July and August; E. centaureata—I took a female of this species September 8th, at light, and obtained eggs from which I bred a good series; E. subfulvata, on leaves and flowers of Yarrow, September and October; E. plumbeolata, on flowers of

22 [June,

Melampyrum pratense, July and August; E. isogrammata-this species has been taken here, but not by myself; I met with it, however, in Trentham Park Gardens, Staffordshire, very commonly in buds of the Clematis vitalba, August; E. castigata, on Heath, Angelica sylvestris, and many other plants, September and October; E. trisignata, on seed-heads of Angelica sylvestris, September and October; E. albipunctata, also on seed-heads of Angelica; E. valerianata, on flowers of Valeriana officinalis, July; E. pimpinellata, on seed of Pimpinella saxifraga, August and September; E. fraxinata-This species I take in the pupa state all through the winter under moss and loose bark of ash; E. nanata, on Heath, September and October; E. subnotata, on flowers and seeds of Chenopodium, August and September; E. vulgata, on Hawthorn and many other plants, August and September; E. absinthiata, on flowers and seeds of Senecio Jacobea, September and October; E. minutata, on Heath, September and October; E. assimilata, on Wild Hop, August; E. exiguata, on Hawthorn, September; E. sobrinata, on Juniper, both Irish and Chinese, May; E. rectangulata, on Apple-flowers, April and May; I also take the pupa of this species under moss and loose bark of Apple, May and June. Through the kind assistance of some friends, I have also bred E. lariciata, virgaureata, campanulata, and tenuiata.—Geo. Baker, 47, Kedleston-street, Derby, March 16th, 1868.

Lithocolletis Bremiella on Orobus tuberosus.—On October 19th last, I found in a lane several leaves of Orobus tuberosus mined by a Lithocolletis. From that time until the snow and hard frost came on in December I continued to find them very sparingly, and at that time, even, some of the larvæ were not full-fed. The mines were large, occupying sometimes the whole of the leaflet, and therefore found six times as large as those in the leaflets of Vicia sepium growing close by, yet they produced the same species (Lithocolletis Bremiella) this spring; and the specimens had not profited at all by their abundant supply of food, being precisely like, in size as well as colour, those bred from the Vicia.

I have never taken the perfect insect at large, but think that it must be out very late in the autumn, as there are young larvæ almost in the middle of winter, and many must, I think, be killed by the hard frost. This was the case with some that I attempted to feed up in confinement.—C. G. BARRETT, Haslemere, Surrey, April 28th, 1868.

Lepidoptera swarming on rushes.—"The last fortnight in July we spent at "Lowestoft, when I went out mothing every night with a lantern, &c., to the low "marshy ground just at the back of our lodgings. I set eighteen dozen insects, for "they swarmed from nine to ten o'clock, so as to make the rushes (Juncus effusus) "look full of various coloured flowers. I could have taken hundreds every evening, "for they sat perfectly still, extracting something from the heads of these rushes—"then past flowering, and all I had to do was to make a selection, and box all I wished for."

I hope you will be able to find a corner for the above extract from a letter received from my late friend Mr. Skepper, of Bury, wishing, ere July comes, that others may profit by it, if this is not an exceptional case.—E. N. BLOOMFIELD, Guestling Rectory, Hastings, May, 1868.

Lepidoptera taken at Guestling, near Hastings, in 1867.—April 3rd, Twniocampa miniosa, 3 at sallow. May 4th, Macaria notata, the only specimen I saw this year; 8th, Eupithecia dodoneata, 1 specimen. June 1st, Cidaria picata; 9th, Pterophorus acanthodactylus; 12th, Cymatophora or, 1 at sugar; 13th, Aplecta tincta, 1 at sugar. July 1st, Acronycta leporina, 1 at rest; 2nd, Pempelia palumbella; 5th, Botys lancealis, 2 specimens; 6th, Pyralis glaucinalis, several; 20th, Macaria alternata, 1 rather worn, in a wood at Fairlight; 31st, Demas coryli, 9; Melanthia albicellata, 1 specimen. August 9th, Acidalic inornata. Also Eupithecia virgaureata, Pterophorus microdactylus, and P. tephradactylus, without note of date.—Id., April 8th, 1868.

Cosmia pyralina in Suffolk.—I bred this from a pupa found at Great Glenham, in Suffolk. I mention this insect to correct an error in my former record. I should have said that some years ago I used to take it at Great Glemham, not uncommonly, at light.—ID.

Note on Phiwodes crenana.—While collecting last autumn in the neighbourhood of Richmond Park, I beat from a birch-bush a Tortrix pupa, which had been in the cavity of a curled-up leaf. After a few days a fine specimen of Phiwodes crenana emerged from it. I believe this insect is generally regarded as a sallow-feeder, and it is just possible that the individual in question may have been so, for there were sallows growing up mingled with the boughs of the bush from which I beat it. The leaf in which it had spun was, however, birch. It is worthy of note, also, that early spring is the recorded time of appearance of this insect in the perfect state.—
T. Blackburn, Grassmeade, Wandsworth.

Note on Stauropus fagi.—I believe it is generally supposed that the larva of this insect feeds only on beech, oak, and birch, and that it spins up between the growing leaves, and with them falls to the ground in autumn. Last autumn I was digging at the roots of an elm, when I turned up a cocoon, unfortunately cut with the digger. On opening it, I was much surprised to find an unturned larva of S. fagi. The cocoon almost exactly resembled that of P. palpina.—E. Hallett Todd, Aldsworth on the Cotswolds.

Early Lepidopterous captures at Colchester.—I send the following jottings from my note-book for 1868, on the chance of your thinking them worth inserting in the "Entomologist's Monthly Magazine":—

January 28th, took P. pilosaria; 30th, took P. pilosaria; H. leucophearia on oak trunks. February 12th, saw V. urtice; 22nd, A. escularia out; 25th, T. hyemana, common; E. scutulana larvæ not rare in thistle stems March 10th, bred T. munda; 12th, took A. prodromaria, P. hispidaria, H. leucophearia, and D. fagella. March 14th, took 9 A. prodromaria on oak trunks, just emerged, between two and six p.m.; have searched in vain for others since; took also 4 S. illunaria, &c., in the evening; 15th, bred a very curious pale buff-coloured variety of N. camelina; 16th, took 2 X. lithoriza, and 2 \( \rightarrow A. escularia, &c.—W. H. Harwood, St. Peter's, Colchester.

24 [June,

Abundance of the larvæ of Melitva Cinzia.—The cliffs near Ventnor are now literally swarming with the larvæ of Melitva Cinzia, feeding on the narrow-leaved plantain, in the orthodox manner. They are in all stages of growth, from quite small to nearly full-grown. It is impossible to walk from Ventnor to St. Lawrence by the cliff-walk without finding thousands. I have not seen any of the chrysalides. Excepting these, there do not seem to be many insects here; unless, perhaps, oilbeetles.—L. M. S. Pasler, St. Lawrence, Ventnor, Isle of Wight, April 20th, 1868.

Xylomyges conspicillaris, &c .- I bred a very fine example of X. conspicillaris on the 4th of this month. I did not expect this reward for my last autumn pupadigging, for in no other season in my life did I ever meet with so few pupæ. After a day's march and toil, the result was generally only about eight or ten Teniocampee : some days I turned up a Smerinthus or an Amphidasis. Upon the 22nd February I bred a crippled \$\times A. prodromaria, very early, I thought, as the pupa was kept in a cold northward room. I placed her upon the bole of an elm tree in my garden, and in the morning a & was in attendance close by her side. This, too, was very early for its appearance, after the middle of March being the usual time, about which period I bred several this season; also T. populeti, T. munda, S. illunaria, and other common spring species. Some of the V. urtice that hybernated in my house took flight more than a fortnight ago, others yet remain waiting for warmer weather, as we have had severe frosts nearly every night during the last three weeks. Two or three fine G. libatrix are still lodging upon my cellar walls. I have been sugaring several times, but not one moth appeared. - ABRAHAM EDMUNDS, Cemetery House, Astwood Road, Worcester, April 15th, 1868.

Dianthacia capsophila bred.—During the month of April I bred a few fine dark varieties of this species. The first insect appeared on the 1st, and the last on the 29th, of that month—Chas. Campbell, 14, Blackburn Street, Upper Moss Lane, Hulme, Manchester, May 11th, 1868.

Early appearances.—Saturnia carpini.—A female came to light on April 24th, near Bromley, Kent; she deposited a few eggs next day. Smerinthus tilic.—A male was taken near this place May 4th.—H. Jenner-Fust, jun., Hill Court, Berkeley, May 9th, 1868.

Superabundance of Abraxas grossulariata.—We have this year a perfect plague of the larva of this common insect, which has appeared in immense numbers in all the gardens hereabouts. I have seldom noticed it to attack anything but the redand white-currant bushes, but this year scarcely anything has escaped its ravages; red, white, and black currants, gooseberries, apple-trees, hollyhocks, cabbages; indeed, there is scarcely a vegetable or flower which has not more or less of the pest upon it. In our own garden the larvae came out very early, feeding upon the unopened buds of the gooseberry, which they devoured so effectually that many of the smaller bushes never showed a leaf, and latterly many of the larger ones have been completely cleared of foliage, fruit, and young shoots.—T. J. Bold.

# General Information.

Prices of rare British Lepidoptera.—At the sale by Mr. Stevens of Mr. Chant's Collection, on the 24th April, Sesia asiliformis and S. allantiformis, against the British origin of which there was not a breath of suspicion, were knocked down, after great competition, at the enormous figure of £5 10s. each (single examples); Mr. Henry Evans, of Darley Abbey, Derby, being the purchaser. In the Lists of the Continental dealers asiliformis is marked at prices equivalent to less than sixpence!—allantiformis seems to be less abundant, and is not priced.

Movements of British Entomologists.—Prof. Westwood and Mr. Hewitson have returned from a visit to Vesuvius. The mountain was sulky, and would not exhibit its performance before the English savans, although it was too lively after they left. Mr. Pascoe is wandering somewhere about the south of Europe. Mr. Stainton has just left on a six weeks tour, with the intention of visiting Venice and Vienna.

Departure of a collector to Ecuador and Bolivia.—Mr. Buckley, who has had considerable experience in collecting insects in India, &c., has started for Guyaquil, with the intention of working the interior of Ecuador and Bolivia; and we doubt not that he will find many interesting things, especially in Rhopalocera. He goes out under the auspices of Mr. Hewitson; Mr. Higgins is his London agent.

Death of Charles Turner.—This well-known collector died in King's College Hospital during the last month, from the effects of a paralytic seizure, over the age of 60. His history was a strange one, and some years since he earned a precarious livelihood by gathering moss for the bird-stuffers. When engaged in this pursuit he fell in with the late James Foxcroft, who induced him to collect insects; and latterly his attention was principally directed to wood-boring beetles, in the collecting of which he attained great proficiency, and found many species new to the British Lists. One of his captures was described as Zeugophora Turneri by Dr. Power, but it has been considered as probably only a form of Z. scutellaris, Suif. Turner died, as he had always lived, in great poverty.

Death of Thomas Desvignes, Esq.—We regret to announce the death of Thomas Desvignes, Esq., at his residence at Woodford, in Essex, on the 11th May, aged 56. Some quarter of a century ago Mr. Desvignes was best known for his magnificent series of varieties of Peronea cristana. In those days every fresh variety of that inconstant insect was duly named and described as a new species. Mr. Desvignes inclined, however, to the opinion that certain groups of those varieties might be referred to separate species, and in the Zoologist for 1845, p. 840, he proposed a scheme of grouping, restricting the number of species of the "crested Button" to 11; and he even hinted at the possibility of "the whole being but one variable species."

Of late years his attention had been almost exclusively devoted to the Ichneumonide, and twelve years ago he prepared a Catalogue of the British Ichneumonide in the British Museum, which was printed by order of the Trustees in 1856, and extends to 120 pages 8vo.

Mr. Desvignes also communicated several papers on Ichneumonida to the Transactions of the Entomological Society of London; and the last volume of this Magazine contains descriptions of two new species from his pen, viz., Ichneumon cambrensis, at p. 130, and Pimpla opacellata, at p. 174.

His collection of British Insects will shortly be sold at Stevens'. Altogether, it is a fine one, and in the Ichneumonidæ, as may be supposed, the finest ever formed of the British species. In the Aculeate Hymenoptera it is also good, including, as it does, the types of Shuckard's Fossores; and in the Coleoptera it rich in Eleteridæ and Xylophaga, containing many rare species in other groups, and including Shuckard's collection. There is also a good collection of Diptera, to which order Mr. Desvignes at one time paid considerable attention.

Deaths of Foreign Entomologists.—Three North European Entomologists of some note have recently passed away—Von Tiedemann, of Dantzic; Sommer, of Altona; and Westermann, of Copenhagen. All three must have been well advanced in years; the latter had attained the great age of 87.

ENTOMOLOGICAL SOCIETY OF LONDON, 4th May, 1868. H. T. STAINTON, Esq., F.R.S., Vice-President, in the Chair.

Mr. Trimen exhibited a cocoon of Saturnia pavonia-minor, with the abdomen of the imago protrading from one end. This cocoon was spun in a small box, and the imago, failing to effect its escape head-foremost, had turned and endeavoured to emerge tail first, and had died in the attempt.

Mr. W. C. Boyd exhibited a collection of the larvæ of Lepidoptera, preserved in a most life-like manner by Mr. Davis, of Waltham Cross.

Mr. Stainton called the attention of the Meeting to a species of Antispila mining the leaves of the vine in the island of Malta; the details of the life-history of which were published in 1750 in the Memoires de l'Academie des Sciences de Paris, in a letter to Reaumur from M. Godeheu de Riville. This larva had not since been observed. Mr. Stainton proposed to call the species A. Rivillei.

Mr. McLachlan said he had recently received a pamphlet from Chevalier Ghiliani, of Turin, respecting the appearance in Italy, last year, of immense swarms of the dragon fly, Anax Mediterraneus. This insect had been originally described from an example supposed to have been taken in Sardinia; but the species had been erased from the European List.

Mr. Smith exhibited the larva of a Xantholinus, to the under-side of which were attached the pupe of a species of Proctotrupide; also the larva of Cerosterna gladiator, and a species of Acheta, destructive to forest-trees in Madras.

Dr. Cleghorn, Conservator of Forests in the Madras Territory, detailed an account of the ravages of these insects, and said, in answer to doubts expressed of the likelihood of an Acheta causing damage to trees, that this insect bit off the leading shoots. Mr. Trimen had noticed a somewhat similar habit in an allied species in South Africa.

Mr. Smith exhibited a collection of eight kinds of larvæ destructive to coffeetrees in India. One of these was a Zenzera, and there were two other Lepidopterous larvæ. The remaining five pertained to the Coleoptera, and included the notorious "white borer," Xylotreckus quadripes. Respecting this latter insect, Dr. Cleghorn

and Captain Taylor gave an interesting account of its habits, and of the immense damage it was occasioning in India. The opinion of the meeting seemed to be that the "borer" probably attacked only those trees that were in a sickly condition, and that remedial measures should be applied towards improving the general health of the trees. That the trees were in a morbid condition was rendered extremely probable, inasmuch as the three years immediately preceding the greatest amount of borer-mischief were notorious for drought.

Dr. Wallace, of Colchester, stated that he would be happy to forward eggs of Bombyx Yamo-mai to any member wanting them, on receipt of three postage stamps.

Mr. Smith read "Descriptions of Aculeate Hymenoptera from Australia."

Mr. J. G. Desborough communicated Notes "On the duration of life in the Honey-bee."

Mr. Hewitson sent a note on Tachyris Jacquinoti.

Erratum in Vol. iv.—In Messrs. Douglas & Scott's paper on New British Hemiptera at p. 271, dele the word "Head" at the beginning of the description of Coriza Scotti.

LIST OF CAPTURES OF HEMIPTERA IN PALESTINE AND SYRIA; TOGETHER WITH DESCRIPTIONS OF SEVERAL NEW SPECIES.

BY J. W. DOUGLAS AND JOHN SCOTT.

Our mutual friend, the Rev. O. P. Cambridge, having visited Palestine and Syria during the months of March, April, and May in the year 1865, collected, besides insects of other orders, the following species of *Hemiptera*, which he kindly placed in our hands for determination, and, where new, for description. With but very few exceptions, only a single example of each species has been captured, and it is extremely interesting to find that out of the whole number at least one-fourth of them appear to be new. We annex an entire list, and afterwards proceed to describe the novelties.

### HEMIPTERA-HETEROPTERA.

### Section SCUTATINA.

- 1. Odontotarsus grammicus, L. Plains of Jordan, in April.
- 2. Eurygaster maurus, L. Plains of Jordan, in April.
- 3. Graphosoma lineata, L. Sea of Galilee, in April.
- Leprosoma Ståli, n. s. On the road from Jerusalem to Nablous, in April.
- Sehirus dubius, Scop. Jerusalem, &c., under stones, March and April.

- 6. Sciocoris marginatus, Fab. Plains of Jordan, in April.
- 7. Sciocoris Cambridgei, n. s. Plains of Jordan, in April.
- 8. Eurydema ornata, L. Hebron, in April.
- 9. Eurydema rugulosa, A. Dohrn. Road from Rasheiya to Damascus.
- 10. Oncoma Germari, Kol., Fieb. Jerusalem, in March.
- 11. Mormidea nigricornis, Fab. Nazareth, Carmel, &c., in April.
- 12. Mormidea varia, Fab. Road from Jaffa to Jerusalem, in March.
- 13. Veterna (Stal) ornatula, H. Sch. Plains of Jordan, in April.

### Section Coreina.

- 14. Palethrocoris disciger, Kol. Plains of Jordan, in April.
- 15. Cercinthus (Stal) Lehmanni, Kol. Plains of Jordan, in April.
- 16. Centrocarenus spiniger, Fab. Nazareth, in April.
- 17. Phyllomorpha laciniata, Oetl. Nazareth, in April.

### Section CECIGENINA.

- 18. Pyrrhocoris apterus, L. Jerusalem, &c., in April.
- Pyrrhocoris Ægyptius, L. Plains of Jordan, on low plants, by sweeping, in April.

# Section LYGÆINA.

- Lygœus militaris, Fab. Jerusalem and several other localities, in March and April.
- 21. Lygœus equestris, L. Hebron, in April.
- Cœnocoris (Fieb.) Nerii, Germ. Plains of Jordan, on low plants, by sweeping, in April.
- Lygœosoma Tristrami, n. s. Road from Nablous to Nazareth, in April.
- 24. Calyptonotus sanguineus, n. s. Plains of Jordan, in April.
- Calyptonotus Æthiops, n. s. Plains of Jordan, on low plants, by sweeping, in April.
- 26. Calyptonotus quadratus, Fab. Plains of Jordan, in April.
- 27. Mimicus nitidus, n. s. Road from Nablous to Nazareth, in April.
- Dieuches (A. Dohrn) melanotus, Fieb. Road from Jerusalem, in April.
- 29. Dieuches (A. Dohrn) pulcher, H. Sch. Mount Carmel, in April.
- Lasiocoris Flori, n. s. Plains of Jordan, on low plants, by sweeping, in April.

#### Section Capsina.

- Pithanus Flori, n. s. Nazareth, at the roots of a dwarf thorny plant; abundant in April.
- Deræocoris sexpunctatus, Fab. Mount Gerizim, Hebron, plains of Jordan, and other places, in April.
- Deræocoris amænus, n. s. Plains of Jordan, on low plants, by sweeping, in April.
- 34. Grypocoris Fieberi, n. s. Plains of Jordan, on low plants, by sweeping, in April.
- 35. Dioncus neglectus, Fab. Plains of Jordan, in April.
- 36. Capsus rutilus, H. Sch. Beyrout, in May.
- 37. Camptobrochis serenus, n. s. Near Baalbec, in May.
- 38. Stiphrosoma amabilis, n. s. Hebron, in April.

### Section REDUVINA.

- 39. Emesa Dohrni, n. s. Amongst water weeds on the edge of the stream running from "Elisha's Fountain," in April.
- 40. Sastrapada (Harpagocharis) Bärensprungi, Stål. Do.
- 41. Amphibolus venator, Klug. Plains of Jordan, in April.
- 42. Holotrichus tenebrosus, Burm. Sea of Galilee, in April.
- 43. Lochus squalidus, n. s. Plains of Jordan, in April.
- 44. Reduvius (Harpactor) variegatus, Fieb. Kefr Menda (near Canael-jelil), in April.
- Metastemma æneocolle, Stein. Plains of Jordan, on low plants, by sweeping, in April.
- 46. Oncocephalus thoracicus, Fieb. Beyrout, in May.

### HEMIPTERA-HOMOPTERA.

- 1. Cixius nervosus, L. Plains of Jordan, in April.
- 2. Triecphora sanguinolenta, L. Beyrout, in May.

# 4.-LEPROSOMA STALL, n. s.

Q Breve, latum, sub-depressum, verrucoso-punctatum, opacum; capite testaceo, lobo medio breviori, apice emarginato; ocellis minutis, remotis, vix infra marginem anteriorem pronoti profunde insertis; pronoto antice ochraceo, postice saturatiori; scutello in angulis basalibus tuberculo ovato, subobliquo, testaceo, carina media apicem haud attingente; elytris umbrinis, profunde nigro-punctatis; sterno rugoso-punctato; pedibus

ochraceis, punctis magnis irregularibus nigris; femoribus nigro subcinctis; tibiis leviter denticulatis; connexivo leviter reflexo. (Antennæ desunt.)

Long. 3\frac{3}{4} lin.

ç. Short, broad, sub-depressed, verrucose punctate, not shining.

Head yellowish-brown, somewhat elongate, the central lobe shorter than the side lobes which meet in front, leaving a small notch, and enclose it. Eyes small, brown, viewed from above somewhat hemispheric. Ocelli minute, remoter placed in a deep cavity beyond the eyes, and almost under the anterior margin of the pronotum. (Antennæ wanting.)

Thorar—Pronotum ochreous, almost perpendicular in front, with a dark brown curved line behind the anterior margin; posteriorly the disc is dark brown; anterior margin concave; sides divergent, concave; hinder angles dilated and rounded; posterior margin straight across the scatellum; longitudinally the posterior portion of the disc straight. Scatellum, the raised basal portion triangular, with slightly rounded sides, to which is joined a central keel tapering towards and dying out before reaching the apex; at the basal angles an ovate, somewhat oblique, brownish-yellow nodule; disc dark brown at the base, fading into brownish-yellow as it approaches the apex. Elytro brownish-yellow deeply punctured with black; membrane suture narrowly dark brown. Membrane pale. Sternum ochreous, rugose-punctate. Legs ochreous, with large, irregular, black punctures, especially on the thighs, which are almost banded. Tibioscinely denticulated. Tarsi yellow. Claus black.

Abdomen—connexivum above pale brownish-yellow, slightly reflexed, much rounded and widened posteriorly, the anterior margin of each segment broadly dark brown; under-side convex, yellow, the anterior margin of the connexivum very narrowly dark brown.

On the road from Jerusalem to Nablous, in April.

The above description has been drawn up from a single example, and named by us after the talented author of the "Hemiptera Africana." The genus is one invented by Bärensprung, and fully characterized in the Berlin Entomologische Zeitschrift for 1859, p. 336. It stands near, as he says, to the genera Eurygaster and Graphosoma, Lap. He enumerates two species, one of which, from Sarepta, he describes as L. inconspicuum, but the diagnosis is very brief and unsatisfactory; the other he simply refers to as from Egypt, and in the Royal Collection.

# 7.—Sciocoris Cambridgeii, n. s.

Ovatus, testaceus, opacus, supra et infra dense leviter et regulariter rufopunctatus; capite sphærico-triangulato; antennis fuscis, tuberculo necnon articulo primo testaceis; ocellis minutis; pronoto subconvexo, antice sulco transverso subsinuato interrupto, impunctata: scutello corii longitudine, 31

macula parva alba ad angulos basales; membrana pallida, pellucida, nervis dilute testaceo-marginatis; femoribus subtus (præsertim anticis mediisque) spinis brevissimis ferrugineis instructis; abdomine subtus subconvexo, stigmatibus concoloribus; segmentorum 3, 4, 5, et 6 angulo basali exteriori macula parva nigra ornato.

Long. 3 lin.

Oval, dull testaceous, thickly, finely and regularly punctured with red on both the upper- and under-side.

Head spherical triangular, with a short, flat, unpunctured channel on the outside and in front of the ocelli. Antennæ pale fuscous-brown, except the 1st. joint and tubercle, which are testaceous; 3rd joint rather more than \( \frac{3}{3} \) the length of the 2nd. Eyes pitchy-black, small, their outer margin in a line with the outer angle of the pronotum. Ocelli minute, somewhat indistinct. Rostrum testaceous, apex piceous.

Thorax—Pronotum flat, convex, with a transverse, slightly wavy channel in front on each side of the centre. Scutellum as long as the corium, the centre with a short faint channel; within the basal angle a small white spot. Elytra—Membrane pale, very transparent; nerves very delicately margined with pale testaceous. Sternum redder than the pronotum. Legs testaceous-yellow. Thighs underneath, especially the 1st and 2nd pairs, with very short brown-red spines. Tibia, spines red-brown. Tarsi testaceous-yellow.

Abdomen beneath somewhat convex, not so thickly punctured towards the centre as on the sides; stigmata unicolorous. Connexivum reddish-testaceous, slightly reflexed; outer basal angle of the 3rd, 4th, 5th, and 6th segments above and below with a small black spot.

A single specimen taken on the plains of Jordan in April. We have much pleasure in naming this insect after its discoverer. It bears a great resemblance to the *S. ochraceus*, Fieb., Europ. Hem. p. 357, 7, but it has not "the marginal line of the head, pronotum and abdomen and stigmata, white," nor is the "membrane dirty white," as in that species.—characters at once sufficient to separate them easily.

# 23.-LYGÆOSOMA TRISTRAMI, n. s.

Nigro rubroque varium, leviter punctatum, aureo-pubescens; capite antennisque nigris; pronoto antice macula magna lunata, marginibus lateralibus late, margine posteriori anguste, carinisque mediis, rubris; scutello nigro, apice rubro; elytris rubris; clavo maculaque subquadrata in medio corii, nigris; membrana nigra, margine exteriori, linea brevi in angulo interiori, maculaque rotunda ante medium, albis; sterno nigro, marginibus lateralibus rubris; pedibus nigris; abdomine nigro, connexivo rufo.

Long. 2½ lin.

Red and black, delicately punctured throughout, and clothed with a short, fine, depressed, golden pubescence. Head black. Antenna black. Orelli pitchy-red, shining. Rostrum pitchy-black.

Therew—Prenotion in front with a black, lunate patch, extending to the transverse concave channel, behind which, on each side of the central keel, a large black patch; lateral margins broadly, posterior margin narrowly, and central keel red, the colour continued into a spot on the anterior side of the transverse channel. Scutellum black, with an arrow-shaped red patch at the apex. Elytra—clauus black; corium red; nearly in the centre an almost square black spot. Membrane black; extreme outer margin and a short narrow streak along the margin of the inner posterior angle white; disc with a round white spot a little above the centre, and from the membrane surure a little inside the posterior angle of the corium, a short, white, diagonal streak running towards the upper margin of the central spot. Sternum black, lateral margins red. Legs black. Tibiw clothed with short, depressed, yellowish hairs. Tarsi piceous.

Abdomen underneath black, finely punctured, clothed with short, depressed, yellow bairs. Connexivum, upper- and under-side red.

A single specimen on the road from Nablous to Nazareth, in April.

With much pleasure we name this insect after the Rev. H. B. Tristram, into whose possession this collection has passed, and in whose work on Palestine all these new species will be figured.

# 24.—Calyptonotus sanguineus, n. s.

Ruber, nitens; capite nigro, leviter punctato; antennis nigris; pronoto antice nigro, postice rubro, plus minusve nigro-infuscato, marginibus
lateralibus reflexis; scutello nigro, subconvexo, medio depresso, carina
brevi posteriori; elytris rubris, clavo linea lata suturali nigra; corio
leviter nigro-punctato, macula magna sub-rhomboidali in angulo interiori
posteriori nigra; membrana picea: sterno, pedibus abdomineque nigris.

Long.  $3\frac{3}{4}$  lin.

Red, shining; corium posteriorly with a large black, somewhat rhomboidal spot.

Head and Antennæ black, the former finely punctured.

Therax—Proportum sides margined and reflexed; anterior half black; posterior half red, more or less clouded with black, which appears to shine through from the mesonotum, the extreme marginal edge narrowly black; hinder angles rounded: posterior margin concave; disc flattish, convex, finely punctured, the punctures in the posterior portion black. Scutellum black, finely punctured, depressed in the centre, with a slight central keel springing from the base and extending to about the middle. Elytro—clavus red, next the inner margin, which is narrowly red, a broadish black streak, minutely punctured, extending almost to the scutellar angle; next the suture a row of minute black punctures. Corion red minutely punctured with black; disc posteriorly at the inner angle with a large, somewhat rhomboidal black spot

joined to the black posterior margin. Membrane piecous. Legs black. Thighs, 1st pair, spindle-shaped, with a tooth on the under-side near the apex, and a row of short dark hairs. Tibiæ, 1st pair on the under-side only, 2nd and 3rd with long, black, spinose hairs.

Abdomen underneath black, in certain lights with a golden reflection.

A single specimen taken on the plains of Jordan, in April.

(To be continued.)

NOTES ON LEPIDOFTERA FROM "GOOLMURG," IN CASHMERE.

BY CAPT. A. M. LANG.

Goolmurg is a large, open, flowery glade at an altitude of 9000-ft. above sea level, on the north-eastern slopes of the spurs of the "Pir Punjal" range of mountains which shut in and overlook the "Vale of Cashmere" from the south.

It is surrounded by thick forests of Pinus excelsa, Picca Webbiana, Pavia indica, Acer, Taxus, &c.

During the months of July and August, 1867, Dr. T. C. Jerdon was encamped at Goolmurg, and took, as characteristic specimens of the Diurnal *Lepidoptera* frequenting the place, the following species:

PAPILIO MACHAON. Common throughout the north-western Himalaya.

GONEPTERYX NIPALENSIS. This species has a range along the whole extent of the Himalaya, from Bhootan to Cashmere.

- Pieris Nabellica. This insect occurs but sparingly in Kunawur, where it has been taken by me at altitudes of about 9000 or 10,000 feet in the Wungur, Kazhang, and Buspa valleys. It has a slow, heavy flight, and is fond of pitching on the late umbelliferous plants, which rise above the dense masses of flowers carpeting the glades in these wooded valleys during the rainy months of July and August. The specimens from Cashmere appear to be lighter in colour than those from Kunawur.
- PIERIS DAPLIDICE. Of this wide-spread species, specimens occur in Dr. Jerdon's collection, though taken in the valley of Cashmere, and not at Goolmarg. These are (contrary to their congener, Nabellica) darker than the individuals of this species taken in the village fields of Spiti and Tibet to the castward.

PIERIS GLICIBIA. This is abundant throughout the Himalayas, and does not appear to vary.

Grapta C-album (?). This Grapta, though apparently common at Goolmurg, occurs but rarely in Kunàwur, where, however, I have taken it at several localities far apart, and of diverse altitudes and climates. Thus one very fine fresh specimen was taken on the bleak Hungrung Pass, at about 15,000 feet altitude; while others were taken 200 miles away on the lower, well-wooded ranges of the Simla district. The species varies considerably in the colouring of the under surface.

- Vanessa V-album. This species appears to be new to the Indian Fauna: I have never taken it myself, or seen it in any collection made in this country. Two fine specimens were taken by Dr. Jerdon at Goolmurg.
- VANESSA XANTHOMELAS. One specimen of this species appears in this series. It is also taken in the Simla district, where, however, it is not common.
- Vanessa cashmirensis. This insect abounds along the whole range of the Himalaya, and is as common in these mountains as the scarcely distinguishable *V. urticæ* is in Europe.
- Argynnis Jainadeva.

  " Kamala.

  " Kamala.

  wur, and districts.

  Argynnis Jainadeva.

  differ from those taken in the Simla, Kunà-
- Argynnis Jerdoni, sp. nov. This species is represented by only one individual (not in good condition) in Dr. Jerdon's serie I have never myself taken it, or seen it in any other collectic. It is a small Fritillary, allied to Semele, and belonging to the second section of the genus Argynnis, as defined in Westwood's "Genera;" the second subcostal nervule is thrown off beyond the end of the cell.
  - UPPER-SIDE—fulvous, markings black. Fore-wing—base, and interior margin, below submedian nervure, dark fuscous; two spots (first circular, second lunular) within, and a streak closing, the cell; a large spot below the origin of the first median nervule; a transverse, curved, discal series of seven spots; a suffused spot on costa at two-thirds from the base; a nearly straight, exterior, transverse series of seven spots; a submarginal series of lunules; and a very slender marginal line, which expands into an angle at the end of each nervule. Hind-wing—the basal half dark fuscous, with a sinuous exterior margin; an exterior, transverse series of six spots; a submarginal series of five lunules; and a very slender marginal line expanding into an angle at end of each nervule.

Under-side-Fore-wing pale fulvous; markings as above, with the exception of the

1868.]

fuscous of the base and interior margin, which is wanting, but is replaced by an additional narrow, lunular, basal mark within the cell. Hind-wing fulvous; base deep ferruginous, including a basal series of three small silvery spots; a broad, curved, transverse, discal fascia (with acutely angulated black margins), silvery-white, except where interrupted by two yellowish-white patches; an exterior transverse curved series of six small ocelli; the sixth (near anal angle) geminated; ocelli black, with minute white pupils; marginal series of large silvery spots, each bordered interiorly with a narrow black lunule.

Thorax, abdomen, palpi, antennæ, dark fuscous; the latter with ochreous tips to the large, flat, pyriform clubs.

Expans. corp. \( \frac{1}{2}'' \); alar. \( 1\frac{1}{2}'' \).

Hab. "Goolmurg" (Cashmere).

LIMENITES LIGYES. This species is represented by only one much mutilated specimen in Dr. Jerdon's series, which resembles the dark "Kunàwur" rather than the light "Simla" variety; but it differs from all that I have yet seen, in having an exterior transverse series, nearly obsolete in fore-wings, but very distinct in hind-wings, of ochreous-red spots, one being placed at the apex of each of the black borders of the submarginal lunules. The under surface is also suffused with ochreous-red.

This species is subject to a considerable amount of gradual variation. At the commencement of its range near Simla, all the individuals accord well with the description of *L. Trivena*, Moore (Ent. Mo. Mag. Nov., 1864,) having broad white fasciæ occupying nearly one-third of the wing; while at the extreme northern limit of the range, Tibetwards (as also apparently to the west in Cashmere), the fascia is narrow and only macular, and the insects have a dark sombre look. The food-plant of the larvæ is *Lonicera tatarica*, which has a wide range in the N. W. Himalaya.

- AULOCERA SWAHA. This is one of the commonest insects of the N. W.

  Himalaya, and does not appear to vary; the Cashmere specimens
  exactly resembling those from Simla, Kunawur, Gurhwal, &c.
- Aulocera Weranga. This appears to be a rare species. One specimen in Dr. Jerdon's Goolmurg series, and three individuals taken by me in Upper Kunawar, are the only specimens known to me.
- EPINEPHILE NEOZA, sp. nov. This small species of *Epinephile* appears to be common at Goolmurg, although in Kunawur it seems to be rare, and confined to only a few localities. On the upper surface it has considerable resemblance to *E. Davendra*  $\circ$ , which

is much smaller, and want the strongly dentated margins and bright white ciliæ of the hind-wings of that species. Davendra  $\circ$  has moreover often (though not always) a second black spot near posterior angle of fore-wings, which never appears in this species. On the under surface of the hind-wings they are very distinct.

3 UPPER-SIDE—greyish-brown. In the fore-wing the discal portion is broadly suffused with a satiny brownish ferruginous; a single apical spot black.

Under-side—fore-wing with markings as above; but the disc is brightly ferruginous and separated from the grey-brown exterior margin by a narrow, sinuous darker line; and the apical spot has a minute white pupil and diffused yellowish iris. A transverse fine, scarcely distinct ferruginous line, strongly angulated outwards below the ocellus, crosses the wing beyond the middle. Hind-wings greyish-brown, minutely striated and freckled, with three transverse, sinuous and dentated lines darker; the first basal, the second discal, the third simulating a sub-marginal series of connected lunnles.

Q. Markings generally as in the male; but the disc of fore-wings above brightly ferruginous, the apical spot larger, and with an indistinct paler ferruginous iris. On the hind-wings the submarginal lunular line of the under surface appears very indistinctly (or not at all) on the upper surface.

Expans. corp. 4\(\frac{1}{2}'''\); alar. 1" 6'''. Form of E. Davendra, but with less acutely dentated margins.

Hab, Kunàwur and Cashmere,

# EPINEPHILE GOOLMURGA, sp. nov.

Q UPPER-SIDE—dark brown. Fore-wing with two rather large black spots, broadly encircled with pale ferruginous; one subapical, the other near posterior angle.

Under-side—greyish-brown. Fore-wing with discal portion ferruginous; ocelli as above, but with irides smaller, and with minute white pupils; an indistinct streak closing the cell, and beyond it a transverse discal line, angulated externally between the ocelli. Hind-wing irregularly and indistinctly tinted with fuscous, ferruginous, greenish and glaucous; but a large, medial, ferruginous patch near base; a curved discal series of seven irregular cuneiform spots, pale yellowish ferruginous, and an incomplete submarginal series of small ocelli, black with yellowish irides; two below apical and two above anal, angle.

Head, thorax, abdomen, palpi, and antennæ, brown; eyes ferruginous.

Expans. corp. 41'"; alar. 1" 6".

Hab. "Goolmurg" (Cashmere)

EPINEPHILE MAIZA, sp. nov. (an præcedentis var.?).

Q UPPER-SIDE—as in Goolmurga, but with the irides of the ocelli much smaller and darker.

UNDER-SIDE—generally as in Goolmurga; but in the fore-wing the greyish-brown borders and the transverse discal line are much broader and darker. In the hind-wing the colour is clear, unclouded brown; the basal ferruginous patch is larger, the discal series of caneiform spots is incomplete and indistinct, formed of smaller, darker spots, and the four submarginal ocelli are entirely wanting. Expans. and Hab. as in Goolmurga. The fore-wing is slightly broader, and has a more rounded apex and more convex exterior margin than in Goolmurga.

Were these insects 3 and 9 they would be indubitably set down as sexes of one species; but both appear to be 9: they may, however, pertain to one species, which is variable, and of which a larger series must be obtained before its character can be correctly defined.

- POLYOMMATUS ARIANA. These (or this?) species are widely spread

  "NAZIRA. Through the N. W. Himalaya, and shows
  everywhere a considerable tendency to variation in the colouring
  of the under surface. The Goolmurg specimens accord with those
  from Simla and Kunawur.
- POLYOMMATUS NYCULA. This very lovely species is common at Goolmurg. In the Simla and Kunàwur districts it is not widely spread, but appears in some abundance in certain localities. The rich blue  $\mathcal S$  appear to far outnumber the dull brown  $\mathfrak P$ , which are easily taken.
- POLYOMMATUS SP. ?. Only two specimens (not in good condition) occurred in Dr. Jerdon's series. I have seen it nowhere else.
- Chrysophanus Kasyapa. This beautiful little "copper," though rare in Simla and Kunàwur, seems to be very common at Goolmurg.

This series of twenty-three species of Diurnal Lepidoptera, although it cannot be supposed to comprise all the species which fly at Goolmurg in the months of July and August, may be assumed to represent all but the rare ones, and fully to characterize the Lepidopterous Fauna of the region. It will be seen that there is no tendency to tropical, or to truly Indian, forms; but that, on the contrary, the collection is entirely suggestive of the European Fauna: in some cases the species being identical with well-known European forms, while the rest are nearly allied Himalayan representatives, closely resembling their European congeners.

Such collections as this, formed at various points along the Himalaya, Hindoo Koosh, and ranges westwards to the Caucasus, would be very interesting, as determining exactly where and under what conditions the closely-allied eastern and western congeners first appear, either in contact or in close proximity.

38 Ully,

NEW SPECIES, &c., OF HETEROCEROUS LEPIDOPTERA FROM CANTER-BURY, NEW ZEALAND, COLLECTED BY MR. R. W. FEREDAY.

### BY ACHILLE GUENÉE.

(Continued from page 6).

### Genus Agrotis.

# AGROTIS (SPÆLOTIS) CŒBULEA, Guenée, n. s.

Alæ anticæ cœruleo-griseæ, lineis mediis maculisque ordinariis vix expressis pallidioribus, saturate cinctis; subterminali nulla, vel punctulis solum indicata: posticæ maris luteæ, margine late griseo, subtus omnes in mare albo-ochraceæ, in fæmina albo-griseæ. Abdomen maris utrinque luteum. Palpi crassi.

Size and aspect of our birivia, which is the European species to which it is most nearly allied. The \$\delta\$ has the superior wings distinctly bluish-cinereous, the fringe concolorous; the half line and the two median ones are faintly marked by whitish atoms, and bordered on each side by darker grey; the orbicular stigma is large, whitish, and well marked, and almost contiguous to the extra basal line; the reniform stigma is much less visible, and is separated from the preceding by a square group of dark atoms; the subterminal line is obliterated or scarcely indicated by little unequal whitish dots; other dots, smaller but more visible and more regular, follow the elbowed line: inferior with the ground colour ochraceous, but much obscured by a broad grey band and vague median line: the under-side of all the wings is yellowish-white without markings. Thorax bluish-grey, and the abdomen full yellowish-ochreous on each side. Antennæ almost entirely fliform.

The \$\times\$ differs much from the male. Its anterior wings are somewhat slatygrey, with the fringe whitish, and the under-side of all the wings white, scarcely yellowish, powdered almost everywhere with grey atoms, as is also the abdomen.

But that which best distinguishes this pretty species is the form of the palpi, which varies enormously in the sexes. In the  $\mathfrak P$  they are extremely thick but glossy, and project strongly beyond the front; the second joint spongy, strongly rounded at the apex, and the third joint is scarcely visible, but in the place of it one sees only a sort of lateral opening. In the  $\mathfrak P$ , on the contrary, they are of the ordinary form, and the third joint is very apparent, ovoid, and directed forward.

# AGROTIS ADMIRATIONIS, Guenée, n. s.

Sub-affinis A. corticeæ. Alæ anticæ grisææ, lineis mediis distantibus, macula orbiculari elongata, renigeram jere attingente, clavijormi longa: posticæ grisææ, jimbria albida; subtus albidæ, lunula cellulari, lineaque media, fuscis.

I have seen only one specimen in rather poor condition. It is rather smaller than corticea. Superior wings smoky-grey, with the ordinary lines much sinuated, blackish and edged with greyish-white atoms; the two median lines very distant, almost parallel; the elbowed line not angulated inferiorily; the three stigmas pale grey encircled with black; the reniform almost touches the elbowed line, and is surrounded by blackish shades; the orbicular very oblong, pyriform, and its apex almost reaching the reniform; the claviform is very oblong and distinct; the sub-

1868.;

terminal line vague; the hinder margin marked with black dots; inferior wings uniformly grey with whitish fringes preceded by vague black dots; beneath they are whiter with a well-marked cellular spot and median shade. Thorax very robust, grey mixed with black, with a blackish line on the anterior part of the collar. The head is darker, and so are the palpi, the last joint of which is long and truncated. Antenno strong, pectinated.

## AGROTIS CEROPACHOIDES, Guenée, n. s.

Alæanticæ pulvereæ, griseo-subvirescentes, punctis terminalibus nigris, subtus albidæ, litura media nigricanti: posticæ griseæ, fimbria albida, atomis nigris; thorax griseus; antennæ pectinatæ.

I have only one example of this Agrotis, which at first sight has the appearance of a Cymatophora allied to flavicornis. Superior wings somewhat dark grey, but entirely covered with long sulphur-coloured or greenish scales which obliterate all markings save the large black dots on the hinder margin; however, with attention, one is able to see traces of the reniform stigma, and it is possible that, in better marked individuals, the other markings would be visible; the fringe is long, grey, with the extremity white: the inferior wings are uniformly grey, with the fringes likewise long, whitish, divided by a dark line: beneath, all the wings are greenishgrey, powdered with black atoms on the costa; the superior have in addition, under the costa near the middle, a vague median cellular blotch, and a black dot at the base of the bristle. The thorax is broad, quadrate, darker grey than the wings, like the head, without any line. Palpi very hairy; the third joint thin, lost amid the hairs of the second. Antennæ long, acute, and furnished with long ciliated laminæ.

## Genus Eumichtis, Walker.

## EUMICHTIS SISTENS, Guenée, n. s.

Alæ integræ: anticæ subvirescenti-griseæ, lineis mediis serratis nigris, subterminali pallida, maculis bene notatis, orbiculari rotunda, reniformi magna, claviformi exiqua: posticæ griseæ, lunulis marginalibus nigris.

The facies of this species is somewhat ambiguous, and its definite position depends upon the discovery of the larva. Perhaps it should be placed in the Hadenida near H. soda. At present it appears best to locate it in its present position. It has some affinity with Mamestra albicolon.

Not larger than H. sodw. The thorax and superior wings testaceous-grey, with a greenish appearance; all the markings are well defined, especially the elbow line, which is formed of little black lunules slightly separated; the two ordinary spots are large, grey encircled with black; the orbicular is round, marked with a subcostal black dot; the reniform broad, filled in with black below; beneath it it is the median shade which forms a series of zig-zags to the inner margin; the subterminal line is slender, pale, sometimes preceded by small isolated black dots; other dots, somewhat lunulate, precede the concolorous fringe: inferior blackishgrey, with terminal black dashes. Collar with a slight black line. Antenna thick, and, with the lens, thickened ciliated denticulations are perceptible. Abdomen without crests.

The a is slightly paler; its abdomen very thick, beneath with two lateral series of black markings. The antennæ have only slight, scarcely perceptible ciliations.

# FAMILY VIII. HADENID.E. Genus HADENA.

HADENA NERVATA, Guenée, n. s

Statura H. mutantis; alse anticæ brunneæ, costa, nervis omnibus, maculis. lineisque ordinariis albis, nigro limbatis: posticæ testaceæ. Thorax albo, brunneo nigroque varius. Antennæ peetinatæ.

This pretty Holera resembles our Neuris argainers in its markings. Superior wings wood-brown, the costa and all the nervures white, strongly defined, as are also the ordinary lines, which are bordered with small black dashes; the two first lines somewhat confused, the elbow line is better distinguished by the small black lunules which margin it; lastly, the subterminal line is the best marked in a zigzag, and forming a between the second and fourth nervules; the reniform and orbicular stigmas are very conspicuous, white, brown in the centre and bordered with black; the claviform is confused with the basal markings: inferior wings pale brown with white fringe; beneath nearly white, with a dark cellular spot and median line. Thorax brown, with black lines, edged with white on the collar and on the patagia. Antennæ spatulated and pubescent, furnished with slender but long laminæ.

The ? differs from the & only in its simple antennæ.

# FAMILY XYLINID.E. Genus XYLOCAMPA.

## XYLOCAMPA INCEPTURA, Walker.

I have before me both sexes of a species which I think identical with that described by Mr. Walker (Cat. Lep. Brit. Mus., p. 1736), although the examples present some differences; notably the absence of the black basal line and terminal dots. The 2, which Mr. Walker has not described, is of a duller grey than the  $\mathcal{E}$ , and the median lines, which are scarcely visible in that sex, are here plainly marked in geminated zig-zags. The third joint of the palpi, which, in the  $\mathcal{E}$ , is very thick and spatulate, is here more slender and linear.

This species, and the following, are not true Xylina, and to me appear to have more affinity with my genus Xylocampu; i. e. until the discovery of their earlier states, and of other analogous species, shall justify the creation of a separate genus proper to Oceania.

## XYLOCAMPA CUCULLINA, Guenée, n. s.

Statura X. inceptura. Alæ anticæ cinereæ, costa, lineolis, margineque nigro-punctatis, maculis distinctis: posticæ fuliginosæ, fimbria alba: subtus albidæ, lunula cellulari limboque nigricantibus. Articulus tertius palporum sub-inflatus, secundo minor.

It is scarcely the size of inceptors, and the wings are rather more obtuse. Superior cinereous, with intensely black terminal dots; the costa also marked with black dots, which indicate the origin of the ordinary lines, which are little visible; the half-line is the most apparent, formed of two arcs, one placed above the other; no basal line; subserminal indicated by a series of wedge-shaped blackish spots; and the central shade by a black dot on the inner margin; the two ordinary spots are visible, and of the normal form: inferior smoky-grey, without markings, and with a white fringe: their under-side whitish, with a large black cellular lunule, and a strongly defined border, which resembles that of the species of America. Antennæ stoot, scarcely ciliated. The terminal joint of the palpi strongly projecting, but much shorter than the second, naked, and somewhat clubshaped. Thorax with a black line on each patagium.

## PHALENITES.

#### FAMILY II. ENNOMID.E.

## Genus Polygonia, Guenée, n. g.

Larva ---: Imago-palpi long, straight, connivent, forming a beak; second joint thick, hairy; third filiform, acute. Antennæ of the 3 rather short, slender, and completely filiform. Body very slender. Thorax scarcely broader than the abdomen, short, scaly. Abdomen very long, not conical. Legs very long and very slender, not pilose, almost equal; the spurs robust. Wings strongly angulated and incised, glossy, shining; the markings mostly well marked.

A genus which appears to be proper to Oceania, and which has but little analogy to others. It seems to agree a little with *Ennomos*. Selenia, Hyperetis, and Entomopteryx, after which it appears to place itself in the order adopted in my "Species."

## Polygonia fortinata, Guenée, n. s.

Alæ valde dentatæ et angulatæ, violaceo-cervinæ: anticæ lineis nigris maxime expressis, 1ª bidentata, 2ª sinuato-bidentata, puncto nigro antecedente lituraque costali fuscis: posticæ pallidiores, linea media incompleta: subtus omnes flavæ, ferrugineo-variæ, lineis distinctis.

This charming Phalénite is a most curious species. The wings are cut in an altogether peculiar manner. Superior having each at the apex two triangular excisions, the first of which is very deep (the inferior have also two excisions near the middle); they are testaceous-yellow, more or less tinged with violet, and with two deep black, well marked median lines; the first line forms above and beneath the median nervure, two very acute angles; the second forms also two corresponding angles, but more open and blunter, and is berdered on the inside with paler; between the two lines is a brown mark on the costa, and a black dot beneath it; apposite to the second angle of the albewed line are two more black dets, and

finally some black markings near the terminal excision: inferior with only one line, which becomes obliterated near the middle of the wing. In well-marked specimens there is also a pale subterminal line common to all the wings.

The under-side is of a more lively yellow, strongly varied with ferruginous, with the same lines and dots as the upper-side, but less marked and reddish: on the inferior is a median band, toothed inferiorily and surmounted, in the cellule, by an oval ferruginous dot, traversed by a fine white line, which divides the cellule in two parts, and is prolonged to the apical margin. The whole body is coloured as in the wings. I have not seen females of this insect.

## FAMILY V. BOARMIDÆ.

Genus GNOPHOS.

GNOPHOS PANNULARIA, Guenée, n. s.

Statura G. obscuratæ. Alæ omnes latæ, dentatæ, griseo-testaceæ, striatæ; margine lato, brunneo-rubricante: anticæ macula quadrata terminali alba. Antennæ pectinatæ.

It is as large as the largest obscurata. All the wings are strongly toothed, testaccous-grey, powdered with fine blackish atoms. The base of the superior and the last half of all the wings are tinted with reddish-brown, forming a kind of vague border, which, on the superior, has the appearance of being denticulated inwardly, and is narrower opposite to the cellule: beneath, this border does not extend to the mangin, and thus forms a subterminal band; there is here, on all the wings, a cellular black dot, which is larger on the inferior. Body coloured as in the wings, without markings. Palpi little prominent, as in all species of the genus. Antennæ furnished with long, but fine, pubescent pectinations.

## FAMILY XI. ACIDALIDÆ.

Genus ASTHENA.

ASTHENA MULLATA, Guenée, n. s.

Statura A. risatæ. Alæ omnes rubro-paleaceæ, lineolis multis undulatis griseis parallelis; duabus mediis griseo sæpe infuscatis; punctulo cellulari nigro: anticæ litura media vix conspicua ferruginea. Fronsbrunnea. Antennæ basi albæ.

This little species approaches more to the true Acidaliæ than do its congeners critical and riesds, yet its wings have the same form: they are pale straw colour rather than readish, and are traversed by a multitude of grey parallel lines, which are nearly straight, but composed of little lunules; the two median ones are more blackish-grey, and, behind these, between the second and third nervules, is a more or less distinct geminated ferruginous mark; a small round, very distinct, cellular dot, and other similar terminal ones: beneath the lines are distinct only from the cellular dots to the terminal border, and the base of the superior wings is suffused with black. Front cinnamon-brown, and contrasting with the vertex, which is paler than the rest of the head, and whitish, as is also the base of the antennae. I say nothing about the latter, believing that I have only females.

## Family XV. FIDONID.E. Genus Panagra.

Panagra scissaria, Guenée, n. s.

Alæ sub-angustatæ, albidæ, sericeæ: anticæ linea umbrata longitudinali punctisque cellulari terminalibusque nigris.

It approaches group 11 (Lozogramma). Superior wings rather narrow, acute at the apex, slender and silky; bone-white, with the fringe concolorous, preceded by little rounded interneural black dots; a similar dot in the cellule; a black longitudinal line parts from the base, and is directed towards the apex, which it does not reach, conspicuous above, but obliterated beneath: inferior wings equally narrow, somewhat prolonged at the anal angle, paler than the superior, and without markings. Antennæ furnished with fine, but long, ciliations. Front glossy and rounded.

### Genus FIDONIA.

FIDONIA (?) SERVULARIA, Guenée, n. s.

Alæ omnes paleaceæ, nitentes, margine jasciaque terminali interrupta migro-griscis: linea media punctoque cellulari: subtus concolores, jascia media pallida. Antennæ pectinatæ. Palpi acuti. Corpus gracile.

I have only one sex of this small species, and dare not affirm that it really belongs to the *Fidonidæ*. It has a deceptive appearance of an Acidalia.

All the wings are entire, shining, straw-yellow with blackish markings, forming at first a common border, which is rather unequal, and afterwards another similar unequal band on the superior, greatly interrupted, and leaving sometimes only a line on the inferior: the superior have, in addition to the elbow line, a cellular dot and two markings on the inner margin: the under-side of the four wings have the markings of the upper, and a distinct median band of the ground colour is there seen, but the colour is paler on the inferiors. Body sleuder, concelevous. Antennæ furnished with long pubescent pectinations. Palpi forming a moderately prominent, but very acute, beak.

(To be continued.)

Occurrence in England of the larva of a terrestrial Trickspterous insect; precably Enoicyla pusilla, Burmeister.—I have several times called attention to the existence, on the Continent, of a Caddis-fly (Enoicyla pusilla) which, in the larva state, bree out of the water amongst moss at the roots of trees;—the exception in these insects which proves the rule. I believe I can now assert that this is a British insect. Mr. Fletcher, of Worcester, has obligingly sent me several living larvæ and their cases found in the moss and lichens near the root of willow-trees, and these cases exactly resemble those of Enoicyla pusilla, from Bavaria, in my collection: they are of a very ordinary form—slightly curved cylinders made of fine sand. It only remains to breed the insects (which should appear late in the autumn) to enable us to add this most interesting species to the British Fauna. As might naturally be expected, the larva is destirute of the external respiratory filaments common to almost all caddis-worms, but the spiracles are not very evident. E. pusilla is also remarkable inasmuch as the female is wingless and little resembling the male. Several authors, before its transformations were shown, remarked on the occurrence

of the perfect male insect, a small creature with little power of flight, in localities where water was absent. According to a letter received from M. Snellen Van Vollenhoven, the larva occurs "in millions" in the wood of La Haye, in Holland. May I ask observers to keep a look-out for this most peculiar insect?—R. McLachlan, 20, Limes Grove North, Lewisham, June, 1868.

Tenthredo olivacea of Klug, a new British saw-fly.—Of this I took a single specimen at Rannoch, in June, 1865, and have received five examples from Dalry, Ayrshire, taken by Dr. Sharp. It much resembles the common and variable T. scalaris, but may be at once distinguished by its olive-green, instead of bright green, ground-colour, and by the thoracic black markings, which here form only slender lines marking the sutures of the lobes; whereas in scalaris they are more conspicuous, and form distinct blotches, even in the least-marked individuals.—ID.

Occurrence of a genus of Coleoptera new to Britain.—I have just received for determination from Miss Catherine C. Hopley, of Lewes, a 3 specimen of Phosphanus hemipterus, Geoff., captured in her garden at that town. Another example has been taken. This luminous beetle occurs commonly in France and Germany, and is distinguishable from the "Glow-worm" by its much smaller size and long and stout antennæ, and the very short gaping elytra of its male. A full account will appear in our next No. from Miss Hopley's pen.—E. C. Rye, 7, Park Field, Putney, June, 1868.

Capture of a species of Omios new to Britain.—During the last and the early part of the present month, I have taken in Hackney Marshes a few examples of both sexes, including a pale form, of an Omios evidently different from our recorded species, and which Mr. Rye thinks is to be referred to the O. pellucidus of Schönherr.

Of those already known as British, it most resembles O. brunnipes, from which it may readily be distinguished by the thin scattered grey hairs on its elytra. It is a little larger than that abundant insect (pallid forms of which have, I believe, before now been mistaken for it), dark pitchy-brown in colour, with reddish-yellow antennæ and legs, a strongly-punctured rostrum, which is furrowed towards the apex; a wide, flattish, laterally much rounded, strongly and somewhat irregularly punctured thorax, and strongly punctate-striate elytra. The anterior femora are untoothed, but the tibiae are curved inwardly towards the apex, where they terminate in a sharp point. The male is much narrower than the female. I observe that Stephens, in the "Manual," describes O. pellucidus, Schön., and does not prefix his desideratum mark; but, from the absence of the insect in our more reliable recent Catalogues, I presume that in this case, as in many others, he copied the description from the original author, under the erroncous idea that he really possessed the species.—W. G. Pelerin, 55, Sandringham Road, Dalston, June, 1868.

Capture of Aphodius villosus.—I captured a very few examples of this rare species on the 8th inst., crawling over the dry sand-hills at Llandudno. It is just ten years since Mr. Cooke found his single specimen under similar circumstances at Southport.—Jos. Sidebotham, 19, George Street, Manchester, 16th June, 1868.

1868.]

Re-occurrence of Coccinella labilis.—I took ten specimens of this insect on the 1st inst., at the same place where I took it before, viz., a wood lying between Whitstable and Canterbury. I found them, as before, on heath, but only when the sun was out, in the middle of the day. In cloudy weather I could not find any, by beating the heath or otherwise. They were confined within the space of a few yards, on a few plants growing at the side of a narrow path; and searching the woods for miles in other directions failed to produce any more. The insect seems to vary somewhat in size.—G. C. Champion, 274, Walworth Road, June, 1868.

Capture of Ceuthorhynchus urtica.—At the end of last April, by sweeping mixed herbage in Headley Lane, Mickleham, I took two specimens of a Ceuthorhynchus, which, as they correspond with the late Mr. Walton's type of C. urticae in the National Collection, must, I think, be referred to that species. They at first sight resemble Caliodes didymus, but are considerably narrower than that common insect.—ID.

Further notes on Coleoptera, &c., near Putney .- In some former notes upon Coombe Wood I mentioned a small stream, forming the extreme western boundary of Wimbledon Common, and in which I have found many running-water Hydradephaga. This stream crosses the Kingston Road at Beverley (or Bavely) Bridge, skirts Richmond Park on the east, thence arrives at Barnes Common, where it is divided on the northern side of that waste into two or three channels, and eventually disembogues itself into the Thames under the first of those narrow iron bridges so difficult to pass on University Boat-race days. In a small portion of one of the Barnes Common channels above alluded to, which receives the drainage of a part of the Common and abounds with the Sweet-Rush, I have found several beetles which are not universally abundant, and whereof a few particulars may not be uninteresting. I have been astonished at the number of species of Stenus to be found in the above-mentioned limited collecting-ground. Of that genus I have already taken twenty-two species in it, - some not of the most trivial. Of them, S. melanarius is the best; of which I have taken my row, by single specimens mostly. Buphthalmus, with which it is very likely to be confounded, must be bottled indiscriminately by those who wish to take this insect, which may be recognised at home from its plebeian congener by the darker basal joint of its palpi, its rather less robust build, thinner legs, rather longer elytra (which are not so closely punctured, and exhibit scarcely a trace of the confluent rough punctures behind) and not quite so closely punctured abdomen. These characters are liable to the stigma of "crambe repetita;" but it may possibly be of help if I again draw attention to them. Next to melanarius, the suddenly bloated, quaint little fornicatus, whose white knees give the idea of a solution of "continuity" between body and legs, has here rejoiced my eyes; and plantaris, which I never before heard of as occurring near London, picipennis (most "stumpy" of Steni) and latifrons (whose body, à la Kiesenwetteri, it is impossible to elongate too much), both in profusion, and incrassatus, are the next in degree ; nitidiusculus, canaliculatus, melanopus (a most active creature), pusillus, the continentally much-vexed ossium, biforeslatus (the real one, alas!) and binotatus heading the profanum vulgus, - Juno, speculator, Rogeri,

46 (July,

tarsalis, oculatus, brunnipes, fulvicornis, buphthalmus (now almost extinct) and cicindeloides,-the last-named in myriads. Evæsthetus læviusculus and ruficapillus, Stilicus geniculatus and orbiculatus, Tachyporus solutus and scitulus, Myllæna brevicornis and minuta (hard to get and harder to set), the common marsh Quedii and Trogophlæi, Lesteva punctata, and Philonthus varius, var. bipustulatus, cinerascens and signaticornis, complete the note-worthy Brachelytra. P. signaticornis seems very rare: it occurs in matted grass-roots, and may be known from villosulus by the usually darker base of its antennæ, its darker legs, and its duller, because more closely punctured, elytra and abdomen. Of the Geodephaga, Stenolophus Teutonus and Anchomenus atratus are the best; and of the Rhynchophora, Erirhinus schirrhosus (not uncommon), Pachyrinus comari and the black-necked Cionus verbasci : Hydronomus, Phytonomus polygoni and pollux (as at Hammersmith marshes, accompanied by its plainly striped form), and other vulgarities abounding. Donacia sericea, Telmatophilus caricis, Chetarthria and Cyclonotum in swarms, Simplocaria, Prasocuris beccabunga (also not seen by me so near London before), Cassida obsoleta, Phyllotreta brassica, Corticaria denticulata and Bryanis juncorum, though all common, will help to swell the list.

I have also found here what I suppose to be Limnebius papposus, conspicuous for the inflation of the middle joint of its palpi. Of the authorities at my command, I can only find mention in Redtenbacher of this peculiarity; indeed, the equal size of the joints of the palpi appears to be one of the generic characters of Leach's Limnebius.

On Wimbledon Common I was much pleased to light upon a little colony of the strident Trox sabulosus, in and under a very small and desiccated dead lamb. This curious beetle, after foolishly giving notice of its whereabouts by its peculiar squeak, shams death pertinaciously. The grass beneath a very small tuft of wool harboured three specimens. In digging up the roots I found Corymbites holosericeus, just out of pupa, with its larva. The dry carcase above mentioned also contained several of the pretty Nitidula quadripustulata, with other commoner carrion-feeders, On the sallows I found Erirhinus salicis, plentifully; replaced in a week by Elleschus bipunctatus. Apion minimum and Epuræa melina also accompanied these species; and Oxystoma genista was not uncommon on small spiny broom. In a marshy place, not before examined, I took some Philonthus nigrita, and P. sanguinolentus with its elytral spots confluent; and, at the old pond near the Mill, Tachyusa atra, Stenus longitursis, and a nest of Aleochara brevipennis. When the small scattered ponds here dry up, many Agabi, Hydropori, Hydrochi, &c., are easily and plentifully to be taken. In this way I have found Agabus nigro-aneus, Marsh., considered specifically distinct from chalconotus by continental authors, but not recorded otherwise than as a var. of that insect in our modern lists. Hydroporus lepidus is particularly abundant here.

1868.)

The rare little Quedius fuscipes, in hay-stack refuse, and Silusa, at its usual Cossus-haunts, have occurred to me near my house; in the garden of which I have captured Cereyon laterale and C. terminatum on the wing. Attagenus occasionave exhibits itself indoors, with the clegant Ptinus sex-punctatus, which, alas! exhibits a fatal attachment to the bottoms of window-frames, thereby coming to grief.

I have also found both sexes of Brachytarsus scabrosus in an old red thorn tree in my garden, round which males of Smerinthus tiliw (there are contiguous limes) are not rarely observed. I have also noticed this hawk-moth on Wimbledon Common.—E. C. Rye, 7, Park Field, Putney, S.W., May, 1868.

Capture of Dianthacia casia.—In the beginning of June I visited the Isle of Man, in company with Mr. Birchall, for the purpose of getting this species. The insect was rather scarce and very wild, as may be imagined from the fact that one night we did not capture a specimen. We succeeded, however, in procuring sufficient for our own wants, with some over.—D. Baxendale, Akroydon, Halifax, June 15th, 1868.

Capture of Dianthæcia Barrettii.—Mr. Birchall has been staying at Howth for a few days this week, and has succeeded in capturing D. Barrettii. On Tuesday evening, when collecting in his company, I took a specimen of D. conspersa, which has hitherto been placed in the Irish list only, on the authority of a single specimen recorded by Mr. Bristow, supposed to have been taken near Belfast.—W. F. Kirby, Dublin, June 18th, 1868.

Lepidoptera bred and captured in the spring of 1868.—The present season opened auspiciously with the capture of six males and one female of N. hispidaria in Richmond Park. Unfortunately, however, all my efforts to establish a brood proved unavailing.

At the end of March I recovered my larvæ of O. fascelina, D. obfuscata, and C. Caja from their tiny outhouse, the remnant of the first-named numbering about a score, of obfuscata ten, of Caja two. More miserable invalids than the fascelina I never beheld. Wood-lice had worked fearful ravages, too, among the obfuscata, but what survived appeared to be strong and well. The young budding shoots of broom were partaken of with avidity by the latter—very languidly indeed by the former. Time, however, worked wonders, and the end of May saw a dozen fat fascelina ready to spin, while seven fine obfuscata dived among the long moss in their flower-pot and disappeared. Caja, too, fed up rapaciously after the manner of its kind.

At West Wickham, in March, I captured a beautiful pair of E. avellanella and a series of T. crepuscularia; while at Shirley my friend Mr. Stanley Leigh took B. parthenias and P. hippocastanaria.

In April one of my breeding-cages yielded P. lacertula, T. opima, and B. hirtaria. From Rannoch larve I obtained fine specimens of N. ziezac; and from larve taken nearer home, dromedarius. At the same time there emerged, beautiful among bred insects, A. myrtilli and A. porphyrea, and richly-coloured examples of A. rubidata, together with many S. ligustri. Now, too, a goodly supply of E. albipunctata, adorned my sotting-boards, shortly afterwards succeeded by centaureata, nanata, exiguata, minutata, assimilata, and absynthiata.

In May, two lovely specimens of *H. contigua* made their appearance, and *C. reclusa* came out freely. About the same time I bred *D. capsincola, cucubali, conspersa*, and *carpophaga*, the first-named in considerable numbers. About the middle of the month a large brood of *E. fuscantaria* crept from the shell, and three little cannibal colonies are now established on a privet hedge in the garden.

While staying at Oxford I took *H. uncana* and *P. agestis*, both freshly out; and my friend Mr. Leigh met with *H. barbalis*, in as good condition as possible, at Bagley Wood.

N. Lucina, whose time had just commenced, we unfortunately missed, a moment's view of one richly-coloured specimen being only sufficient to assure us that the pretty little fritillary was out. On a lamp by the New Museum I found the darkest male of O. pudibunda I have ever seen.

At Coombe Wood, the other day, my brother fell in with P. ramana, and at the end of the month the first H. chenopodii emerged from the pupa.—J. B. BLACKBURN, Grassmeade, June, 1868.

Notes on collecting in Burnt and Bishop's Woods, in Staffordshire.—I give some results of a week's collecting in June in the above-mentioned woods.

In Trichoptera, I again found one Neuronia clathrata (beaten out of birch), and had the pleasure (if pleasure it can be called) of seeing another, but failed to capture it. Stenophylax alpestris was beaten rather freely in a marshy place, with neither streams nor ponds in the vicinity. Limnephilus auricula and L. vittatus were beaten from Scotch fir in exceedingly dry situations.\* L. luridus was found in the greenhouse at Willoughbridge. Most of the usual species of Coleoptera were found; but I did not see Calosoma inquisitor, which was abundant last season, running on the branches in search of Lepidopterous larvæ, and falling to the ground with the larvæ still in their jaws on the application of a blow from the beating-stick. In Lepidoptera, I had the pleasure of taking Sesia sphegiformis in both woods. insect rests upon low plants in the neighbourhood of alder, and one specimen was found among birch, far from alder, hovering over a tuft of Calluna about 4 p.m.; it is also upon the wing in the evening, flying rapidly and undulating like M. stellatarum. Angerona prunaria was in profusion. Macaria notata rather sparingly; together with Eupithecia plumbeolata, pulchellata, and lariciata. The larva of Trachwa piniperda was abundant: the pupa is decidedly subterranean. Hymenoptera were plentiful. Diptera very abundant. I captured one Asilus forcipatus carrying Tenthredo livida in its mouth; also Chrysotoxum marginatum rather sparingly, hovering and flying in and out of the heather like some wasps. Tipula crocata was abundant on dusty roads; all females but one, which was beaten from fir.- JOSEPH CHAPPELL, 8, Richmond Road, Greenheys, Manchester, 12th June, 1868.

Early and late appearances of Lepidoptera.—Saturnia carpini occurred on Chat Moss from the 5th to the 12th April; A. lepovina I found stretching on the 25th May; and the same evening I saw T. gothica at rest on the trunk of an Alder; One specimen each of T. populeti and rubricosa emerged from the pupa on the 18th and 20th of May. The latter pupæ were dug during the winter, and had been kept in a warm room.—Chas. Campelle, 14, Blackburn Street, Upper Moss Lane, Hulme, Manchester, June 8th, 1868.

<sup>\*</sup> The species of Limnephilus seem to fly any distance to rest in Scotch-fir. No other tree offers such advantages to the collector of these insects.—R. McL.

Note on the habits of Saturnia carpini in Orkney.—Of eleven pupæ of S. carpini that I reared from larvæ found by me in July, 1866, four produced females last year (23/5/67 to 16/6/67), four contained ichneumons, and the remaining three produced males in April this year. Is it generally the case that the males remain a year longer in the pupa state than the females?

I do not know if this note be worth insertion in your magazine, but have sent it, as it is new to me, and may perhaps be so to others.—J. TRAIL, Manse of Harray, Orkney, 12th May, 1868.

Captures of Lepidoptera at Witherslack.—On May 9th, 17th, and 18th, I took five specimens of Catoptria aspidiscana; they needed close searching. The weather was glorious, and I met with my usual assortment of Micros, &c. E. Kilmunella, O. Loganella and scoticella, P. uncana, C. rusticana, C. vacciniana, L. miscella, L. decorella (?), 3 larvæ of P. tephradactylus on golden rod, a dozen or two cases P. Verhuelella and one of D. marginepunctella, a dozen beautiful N. viridata and E. octomaculalis, A. derivata, C. miata, E. virgaureata, eviguata, and larvæ of sobrinata and of T. coniferata. A good number of common species had put in appearance (considering the season was early), and so had the vipers, of which many came to grief with my stick, to the wonder of the natives, who dread them.—J. B. Hodgeninson, 15, Spring Bank, Preston, 20th May, 1868.

Captures of Lepidoptera in various localities in March, April, and May.—At Richmond, P. hispidaria and A. prodromaria. At Loughton, and other parts of Epping Forest, D. unguicula, E. trilinearia, C. temerata, A. pictaria, A. derivata, S. perlepidana, S. aureola, &c. At Wimbledon Common, E. porata, A. cuprella, S. radiella, and A. siculana. At Wickham, P. lacertula, P. hippocastanaria, E. pusillata, At Leith Hill, T. rubricosa, T. leucographa, T. populeti, T. gracilis, T. munda, T. miniosa.—Thomas Eedle, 9, Maidstone Place, Goldsmith Row, Hackney, May, 1868.

London Lepidoptera.—My brother knocked down in our orchard here, some days ago, a fine female specimen of the Orange-tip butterfly. Is not this a peculiar locality? A week ago I saw a Burnet-moth under circumstances still more peculiar. It was flying in the hot sunshine within two or three yards of the Portland Road Station of the Metropolitan Railway.—H. Montague, Stockwell, 4th June, 1868.

## Rebiew.

Faune Entomologique Française, Lepidoptères, par M. E. Berce; dessins et gravures par M. T. Devrolle. Vol. i. Rhopalocères (Paris: Deyrolle fils, 1867). 12mo. 18 plates.

The first volume of this series (Coleoptères, par Fairmaire et Laboulbène) has long been considered very useful to Coleopterists; and we are glad to find that the long-suspended issue is recommenced by the publication of the first of four projected volumes of Lepidoptera. We hope that the editors will not stop here, but complete the series of Coleoptera and Hemiptera which are stated to be in progress, and that the other orders of insects will in turn receive their due attention, so as to afford a complete Entomological Fauna of France.

A good Manual of French Lepidoptera has long been wanted. De Villiers and Guenée's book is not sufficiently portable for convenient use, and, moreover, was discontinued at the end of the Rhopalocera. The entomological traveller in France may now possess himself of a convenient little manual, which, even when completed, will add but little to his baggage.

The first hundred pages are chiefly occupied with directions for collecting, taken from the "Nouveau Guide de l'Amateur d'Insectes," and other introductory matter, the value of which is much increased by the woodcuts illustrative of apparatus, neuration, &c.

The plates represent about 80 species, sometimes giving the different species or varieties, and frequently both surfaces of the wings; and in most cases are very well executed. A serious defect, however, which greatly impairs the value of the book, especially to the purchasers of uncoloured copies, is, that the insects figured are rarely described in the text; a reference to the figure being apparently considered sufficient. We hope this omission will be remedied in the succeeding volumes and in future editions. It is true that almost any figure would be sufficient to identify Libythea Celtis or Vanessa Io; but no one could be expected to recognize Erebia Ligea from a plate which does not show the peculiarly characteristic white markings of the under-side of the hind-wings.

The arrangement followed throughout is nearly that of Standinger. We are glad to observe that M. Berce does not adopt the practice (which we find in some French books of Natural History) of popularizing everything, even to the Latin names.

There are numerous notices of the food-plants and times of appearance of the larvæ; but, except under the genera, we can find no descriptions of larvæ. It is to be regretted that M. Berce has passed over without notice various known larvæ (Theela W-album and Cænonympha Davus for instance); and in some cases (as in those of Polyommatus Eurydice and Parmassius Mnemosyne), he has added "chenille?," or even "chenille inconnue," to species of which the larvæ have been well described and figured, as both P. Eurydice and P. Mnemosyne have been by Freyer.

Notwithstanding these slight blemishes, we believe the book will be found useful to those interested in European Lepidoptera, and especially to the entomological tourist.

## General Information.

French exhibition of Economic Entimology.—We have received a circular announcing that the Société d'Insectologie Agricole" (could not our neighbours have invented a better term than "Insectologie";), of which Dr. Boisduval is president, intends to hold an exhibition of useful and noxious insects, and their products and depredations, with the agents that benefit or injure us by destroying these insects, and the artificial means employed in destroying the direct or indirect destroyers. It will be held in the Palace of Industry at Paris, and is to be open during the whole of the month of August next. This exhibition will no doubt be worthy of a visit from any entomologist who may be in Paris during August; Dr. Boisduval's reputation is a sufficient guarantee that no means will be spared to render it instructive alike to the agriculturist and entomologist.

Brazilian insects.—Mr. Heinrich Burmeister, son of the well-known author of the "Handbuch," who has resided twelve years in Brazil, intends to emulate the example of Messrs. Bates and Wallace, by collecting in Brazil, chiefly in the province of Espirito Santo, with visits to other parts of the South American Continent. Mr. Burmeister has already devoted all his spare time to the breeding of Lepidoptera, and has thus accumulated a mass of facts of the greatest importance with regard to the natural position of many genera.

The Birch-wood Dinner.—The annual dinner of the Entomological Club will be held, as usual, at "The Bull," at Birch-wood Corner, on Friday, the 3rd of July. Osbert Salvin, Esq., will preside.

The late Mr. Desvignes' Collection of Ichneumonida.—We have great satisfaction in stating that this important Collection has been purchased by the Trustees of the British Museum.

ENTOMOLOGICAL SOCIETY OF LONDON, 1st June, 1868. H. W. Bates, Esq., F.Z.S., President, in the Chair.

G. P. Shearwood, Esq., of Stockwell, and Il Cavaliere Francfort, of Pallanza, Lago Maggiore, were elected Members.

Mr. Jenner Weir called attention to a Report of a Meeting of the Scientific Committee of the Royal Horticultural Society, in which were some rather remarkable misapprehensions of the habits of the larva of Coleophora hemerobiella. It was explained that none of the Entomologists who are Members of that Committee were present at the Meeting in question.

Mr. F. L. Keays exhibited specimens of *Psyche crassiorella* from Hornsey, and stated that the oaks were there much disfigured by the curled leaves in which *Attelabus curculionides* deposits its egg.

The Hon. T. De Grey exhibited pupe of Hypercallia Christiernana; the larvæ had found near the end of May feeding on Polygula vulgaris near Shoreham, in Kent. Mr. McLachlan mentioned that he had recently found the larvæ in the same locality.

Mr. A. G. Butler exhibited varieties of Nemeobius Lucina and of Anthocaris cardamines from Herne Bay; the latter were remarkable for the great size of the central black spot of the anterior wings; the posterior pair also showing an indication of this spot.

Mr. H. Burmeister (son of Professor Burmeister), who was present as a visitor, exhibited many drawings of the transformations of South American butterflies, together with the pupa-skins and perfect insects of some of them. He mentiomed that he had bred a species of Castnia, which he exhibited, from a larva feeding in the interior of the pseudo-bulbs of Orchidacea.

Mr. Butler mentioned that Otiorhynchus picipes had been causing great damage to roses near Manchester, by eating off the young shoots.

Professor Westwood made some remarks on the habits of Atenchus sucer, as observed by him at Cannes.

Mr. McLachlan exhibited larvæ of a caddis-fly which he attributed to Enviewa pusilla of Burmeister, the only authenticated instance of one of these insects living out of the water in the larval condition. These had been sent to him by Mr. J. E. Fletcher, of Worcester, who found them at the roots of willow-trees.

Mr. Frederick Bates communicated "Descriptions of New Genera and Species of Heteromera," from Australia.

#### ON THE BRITISH GYRINIDÆ.

#### BY D. SHARP, M.B.

The Gyrinidæ must be considered as one of the most peculiar and interesting of all the groups of beetles which are found in this country. The family, though it contains very few genera and species, is among the most sharply defined: indeed, though it possesses points of resemblance on the one hand with the Dytiscida, and on the other with the Parnidæ, it is so distinct as to forbid the idea of its being descended (in a Darwinian sense) from either of them, unless we suppose that an extremely free disappearance of connecting links, of which we can now find no trace, has taken place. It is also interesting to notice that a genus of Carabidæ, Adelotopus of Hope, more resembles the Gyrinidæ in general appearance than do any insects of either of the two families to which it is allied: not only is the facies of Adelotopus that of Gyrinus, but both possess two separate eyes on each side the head, a peculiarity of structure almost, I believe, without parallel in the rest of the Coleoptera; the antennæ, too, of Adelotopus are very short and compressed, so as to show a great resemblance to those of Gyrinus; indeed the similarities between Adelotopus and the Gyrinida appear to be exactly of the character that has been called mimicry; and it is also worthy of note that the Gyrinidæ, or the insects mimicked, exhale a peculiar nastv-smelling fluid when handled. As the Gyrinida inhabit exclusively the surface of the water, and Adelotopus lives under the bark of trees, no theory of protection founded on natural selection can account, I should imagine, for this remarkable reproduction of peculiar characters in very distinct groups.

Thomson (Skandinaviens Coleoptera, Vol. II.) places the Gyrinidæ along with Parnus, Heterocerus, and others in a group which he calls Amphibii; but they are now generally considered a distinct family, and, along with the Dytiscidæ, form the group called Hydradephaga. The characters by which the Gyrinidæ are distinguished from the other Hydradephaga are so very peculiar, that, though my object at present is only to call attention to the characters of our British species, it is impossible to pass over these interesting points without some short notice of them.

1st. The structure of the trophi is different from what holds in any of the Dytiscidæ, though not very peculiarly or decidedly.

2nd. The Gyrinidæ possess a pair of eyes on each side of the head, and these are placed so that the upper ones enable the insect to see

above it, in front of it, and laterally; while the under ones make it possible for it to see at the same time directly downwards as it swims on the surface of the water.

- 3rd. The structure of the antennæ is remarkable, and differs greatly from that of the *Dytiscidæ*, though it is very like what we find in *Parnus*. Each is inserted in a cavity at the side of the head; the first joint is very small, the second is large and dilated, and the third, also large, is inserted at the side of the second, while the remaining joints are so compressed and soldered together that it is not decided whether the antennæ consist altogether of ten or eleven joints.
- 4th While in the *Dytiscidæ* the mesosternum is small and feeble, and the metasternum is largely developed, in the *Gyrinidæ* the mesosternum is large, while the metasternum is correspondingly reduced and small.
- 5th. The structure of the legs is most remarkable in the Gyrinidæ, and affords in several respects one of the most interesting examples of the modification of organs to serve special functions that could well be instanced; while the four posterior legs are formed into powerful swimming organs, the anterior are quite different-they are elongate, and are so placed that they can be packed under the body so as to offer not the least impediment to the most rapid motion, while by one or the other being thrust out the course of the insect is instantly changed, or when both are thrust out retarded, and thus the Gyrini are enabled to perform those rapid and eccentric motions which have attracted the attention of all who have eves and can use them. This rudder-like function of the front legs is also perfected by the peculiar position in which they are placed, a position so strange that what should be the under surfaces of the anterior tarsi look towards one another. instead of downwards: dependent on this is also a peculiar modification of the tarsi, which are compressed laterally, so that, notwithstanding the peculiar position of the legs, the broad aspects of the tarsi are presented upwards and downwards as in other beetles; still stranger is the fact that what is in reality the side of the tarsus is thickly furnished in the male with peculiar hairs such as are placed in other beetles on the real under surface of the tarsi. Had these hairs been placed in a position anatomically the same as they are in other beetles, they could have been of no use for ile purpose for which they are intended; thus they are in a position

54 (July,

which, though abnormal, enables them to be of service to the creature. In the entire absence of connecting links, it requires a considerable amount of faith to believe that these changes can have been brought about by natural selection, especially as it requires a liberal use of the imagination to conceive the steps by which they could have been effected.

The four posterior legs differ entirely from the anterior; they are short, compressed laterally, so as to resemble considerably the fins of a fish; and while in the *Dytiscidæ* swimming is facilitated by the attachment of peculiar hairs to legs but slightly modified from the ordinary type, in the *Gyrinidæ* swimming hairs are also present, but the entire leg is remarkably modified, and developed into an organ exclusively suited for the purposes for which it is destined. Moreover, in the *Dytiscidæ* only the hind pair of legs are specially modified, while in the *Gyrinidæ* this is the case with both the middle and hind pairs.

Though the peculiar distinctness of the *Gyrinidæ* as a group, and the absence of anything like connecting links between them and other beetles, would seem to be opposed to the idea of their being connected by descent with other *Coleoptera*, yet the fact that within the bounds of the group the species are very closely allied, yet variable, and that it is not easy to fix with certainty the limits of some of the species, appears to be favourable to the theory that all the *Gyrinidæ* may have descended originally from some one species. The difficulty above adverted to of distinguishing the species of *Gyrinus* from one another is not diminished by the fact that they are generally found in little colonies, and that these colonies often consist of two or three species; sometimes the most allied species being found together, and at other times the most dissimilar.

We have in Britain two genera of this family; they are very easily distinguished by the following characters:—

- Body entirely destitute of pubescence, extremity of abdomen broad, and rounded at its apex—GYRINUS.
- Body covered with a thick, short pubescence, extremity of abdomen conical—Orectochilus.

## 1.—Gyrinus, Geoffroy.

Our species of Gyrinus may be arranged in three groups-

\* Under surface entirely testaceous - G. minutus and urinator.

- \*\* Under surface entirely or in greater part black; inflexed margin of elytra light rufo-testaceous—G. natator, bicolor, distinctus, caspius, and colymbus.
- \*\*\* Under surface entirely or in greater part black; inflexed margin of elytra æneous—G. marinus and opacus.
  - \*-Under surface entirely testaceous.
- 1. G. minutus, Fab. Oblong ovate, tolerably convex, above of a bluishblack colour, scarcely shining, the sides of the body and front of the head metallic, the elytra strongly and equally punctate striate, under-side and legs entirely rufo-testaceous.

Long. 
$$1\frac{2}{3}$$
— $2\frac{1}{3}$ "; lat.  $1$ — $1\frac{1}{4}$ ".

The smallest of our species, and one that is readily distinguished from all the others of the genus. The upper surface is densely and finely coriaceous, so that the insect is less shining than any other of the species, the head is bluish-black, more or less brassy in front, the sides of the thorax are brassy and rugose, and there are some evident rugosities at its base in front of the scutellum; the scutellum has at its base a broad, well-marked carina. The elytra are brassy at the sides, strongly punctate striate, the external strice a little more marked than the inner ones, the strice are also rather more marked at the apex than at the base. The under-side, including the inflexed margin of the elytra, together with legs, is entirely testaceous; sometimes the basal segments of the abdomen are a little infuscated. My specimens show but little variation.

I have found this species abundantly in Invernesshire, and it occurs in various other parts of Scotland, though it is very local. I have never found it in England.

2. G. urinator, Ill. Ovate, convex, very shining, above of a somewhat purple-black, the front of the head, the sides of the elytra, and some lines along the striæ of the latter, coppery; the elytra are finely punctate-striate, the striæ being entirely obliterated, except at the sides and apex; under-side and legs entirely rufo-testaceous.

Long. 3-3½"; lat. 12-1½".

This is also a very distinct species, and is easily distinguished from all our other species (except *G. minutus*) by the colour of the under-side: its very shining appearance and the fine punctuation of the clytra prevent its being confounded with *minutus*.

The front part of the head is brassy and dull, the vertex black and shining; the thorax black and shining, coppers towards the side, with

a long central transverse impressed line, and behind this a shorter one at each side. The elytra are coppery at the sides, suture, and along the course of the striæ; the latter are finely punctate, the punctures being only visible at the sides and apex. The under surface, including the inflexed margin of the elytra and the legs, reddish testaceous.

This species, which is more properly a native of the south of Europe, is taken by Mr. Bold in the Duabon near Newcastle-on-Tyne. I have never found it myself, and indeed know no other locality for it. It appears to vary but little.

- \*\*- The greater part of the under surface black, the inflexed margin of clytra and claws of the tarsi bright reddish-testaceous.
- 3. G. natator, Scop. Ovate, convex, above bluish-black, with the sides brassy; elytra punctate striate, the internal striæ much fainter than the outer; under-side black, with the margins of the elytra, and the legs, and sometimes the breast and apex of abdomen, reddish-testaceous.
  Long. 2½-3½"; lat. ½-1½-1½".

Of this species there are two well-marked races, considered by Erichson and Suffrian as distinct species, viz.:—

- (a) G. mergus, Ahr. Broad, not so much narrowed before and behind, the inner striæ evidently finer than the outer, especially towards the suture, but always distinct and perceptible for their whole length.
- (b) G. natator. Narrower, the sides more rounded, and the internal striæ very obsolete or entirely wanting towards the base of the elytra.
- G. mergus is the common form in the south of England, but does not occur at all in Scotland.
- G. natator is abundant in Scotland, but rare further south. I have it from Cambridge, but not from the south of London. I have, however, a small series of specimens taken at Deal which agree closely with one another, and possess the form of G. natator with the punctuation of G. mergus.

This species also varies in the colour of the under-side, the extremity of the abdomen being nearly always, and the breast very often, ferruginous; while on the continent the colour of the under surface is generally black. A variety in which the upper-side is of a dark unicolorous-black also occurs.

Very common everywhere throughout the year; the two races having apparently a different distribution.

- 4. G. bicolor, Payk. Oblong, the sides nearly parallel, convex, above bluish-black, shining, the sides brassy, the elytra punctate-striate, all the striæ evident, but the internal rather finer than the external, under-side black, inflexed margin of elytra and thorax, and legs rufo-testaceous.
  Long. 3\frac{1}{3} 4"; lat. 1\frac{1}{4} 1\frac{2}{3}".
- Var. Extremity of abdomen and breast reddish.

This species is distinguished by its elongate and parallel form, by its very long elytra, the apices of which are more rounded than in the allied species. Sometimes the extremity of the elytra is obscurely red.

It appears to be rare, most of the specimens standing under this name in our collections being the next-mentioned insect. Mr. Bold has a few specimens taken in Durham, and there are also some in Mr. Crotch's collection.

- 5. G. distinctus, Aubé. Oblong, ovate, the sides sub-parallel, convex, above bluish-black, shining, the sides brassy, the elytra punctate-striate, all the striæ evident, the internal finer than the outer, especially towards the base, under-side black, legs and inflexed margin of elytra reddish.
  Long. 2<sup>3</sup>/<sub>4</sub> 3<sup>1</sup>/<sub>2</sub> ; lat. 1<sup>1</sup>/<sub>4</sub> 1<sup>2</sup>/<sub>3</sub> ...
- Vars. Colour above entirely black, the breast and extremity of abdomen being sometimes red; also differs considerably in size and form.

This is, I think, only a variety of the preceding (G. bicolor). The characters by which it is said to be distinguished from it are, that G. distinctus is smaller, with the sides more rounded, the elytra shorter, and their apices not so rounded, so that the external angle is more evident. Some of my specimens show all these characters plainly enough, so that I do not think I am in error in calling them G. distinctus; but, as variations in all these points occur, I think it will have to be united with G. bicolor.

Common in various parts of the country. Brighton, Deal, Edinburgh, Newcastle; sometimes in brackish, sometimes in fresh, water.

6. G. caspius, Aubé. Oblong ovate, tolerably convex, above bluish-black, not very shining, the sides brassy, the elytra punctate-striate, the internal striæ very evidently finer than the outer, the interstices obsoletely but thickly punctured, under-side black, margins of thorax and elytra, extremity of abdomen and legs, red.

Long. 31/3; lat. 13/11.

This species very closely resembles the preceding, but it is not so shining, and when examined under a good magnifying-glass, the interstices are found to be obsoletely though thickly punctured; whereas in

58 [August,

both the preceding species they are quite impunctate and shining. The internal striæ are also finer, and the punctures placed rather more closely together.

Two Q specimens in Mr. Crotch's collection are all I have seen; but I have two G examples from the Continent under the name of distinctus; as, however, Kiesenwetter remarks that the interstices in G. distinctus are entirely impunctate, I am inclined to consider them as rather G. caspius. Kiesenwetter remarks, also, that G. caspius and distinctus may probably have to be united; but if I am correct in my determination of the present species, the punctuation of the elytra opposes this view.

7. G. colymbus, Er. Ovate, not very convex, above bluish-black, slightly shining, the elytra punctate-striate, the internal striæ rather finer than the outer, the interstices thickly and evidently punctured, almost transversely strigose, so that the upper-side is not so shining as in the other species; under-side black, margin of thorax and elytra, and legs (including the claws), breast, and extremity of abdomen, rufo-testaceous.

Long. 
$$3-3\frac{1}{2}$$
; lat.  $1\frac{2}{3}-2$ ".

This is a very distinct species, presenting at first sight the greatest resemblance to *G. marinus*, which it much approaches in size and form; the colour of the under margin of the elytra, and of the claws, however, readily distinguish it from that species; the strice of the elytra, also, are finer, and the interstices are more evidently punctured than in *marinus*; the peculiar sculpture of the elytra distinguishes it from all the other species.

Six specimens in Mr. Crotch's collection, taken apparently at different times, are all I have seen of this insect. These specimens are certainly broader than they should be according to the description in measurements given by Kiesenwetter and Suffrian of G. colymbus; in other respects, however, they agree.

- \*\*\*—Under margin of elytra brassy, claws (anterior at base, the others entirely) black.
- 8. G. marinus, Gyl. Ovate, not very convex, above bluish-black, shining, the sides brassy, the elytra strongly punctate-striate, the internal striæ being scarcely finer than the outer; the striæ are deep, especially posteriorly, so that there the interstices are even convex; under-side brassy-black, legs red, with the exception of the claws.

Long. 
$$2\frac{1}{2}$$
— $3\frac{1}{2}$ "; lat.  $1\frac{1}{3}$ — $1\frac{2}{3}$ ".

- 3. Shining, the interstices being very obsoletely punctured.
- ? . Sub-opaque, the interstices being thickly punctured.

Varies greatly in size, the males being generally smaller than the females. Local, but common, when found, in England Horning and Deal. I have not found it in Scotland.

- 9. G. opacus, Sahl. Ovate, not very convex, above bluish-black, shining, the sides brassy, the elytra rather finely punctate-striate, the internal striæ being evidently finer, especially towards the base, than the outer; under-side brassy-black, legs red, with the exception of the claws.
  Long. 2\frac{1}{3} 3"'; lat. 1\frac{1}{4} 1\frac{3}{8}".
  - 3. Shining, the interstices being very obsoletely punctured
  - 2. Not so shining, the interstices being thickly punctured.

Var. The upper surface being altogether dull and opaque.

This species is very closely allied to the preceding, and like it, varies considerably in size; it is, however, on the average considerably smaller, and the striæ of the elytra are finer, especially the inner ones; some of the varieties, however, come very close to one another. Local, but common, in Scotland—Edinburgh, Glasgow, Inverness, Galloway. Also at Horning, in company with G. marinus; I have not noticed it, however, from farther south. I think I am right in my determination of this species. Moreover Suffrian recorded it as British twenty-five years ago, though it has not yet made its appearance in our Catalogues.

The dull variety is very curious, resembling *G. minutus*, in whose company it was found at Invercannich, Invernesshire.

## 2.—Orectochilus, Lacordaire.

The generic characters readily suffice to distinguish the single species, O. villosus, Fab. It is oblong, ovate, convex, the upper surface pubescent, and tolerably thickly and finely punctured, fuscous in colour, the elytra without any striæ, the under surface and legs reddish-testaceous.

Long. 3".

This species is local and of nocturnal habits. I have seen it gyrating by moonlight in Loch Ken, in Galloway. It surpasses any of the *Gyrini* in agility, so that when disturbed, the eye fails to be able to follow its motions. In the day-time it remains concealed under stones and logs by the side of the water, but the instant it is disturbed it darts away, so that it is very difficult to secure. By lifting, however, very gently the logs and stones where it occurs and dropping them instantly into a net, a good number may be procured. I captured in Galloway, last summer, between 30 and 40 specimens on the under-side of a single

60 (August,

log in this way. It occurs also in Devonshire and Derbyshire, as well as in other parts of Scotland, in quickly running streams.

With this I conclude my remarks on our British *Gyrini*, regretting very much they are of so unsatisfactory a character; this cannot, however, I think, be helped, as the species are very closely allied and yet variable. A good collection, containing series of the different species from various parts of the country, would be very interesting; but these insects appear to be much neglected by collectors.

Thornhill, Dumfries, May, 1868.

DESCRIPTION OF A NEW SPECIES OF WEST AFRICAN PAPILIO, HITHERTO CONSIDERED TO BE THE P. ZENOBIA OF FABRICIUS.

BY ARTHUR G. BUTLER, F.L.S., F.Z.S.

In his "Systema Entomologiæ," p. 503, n. 255 (1775) Fabricius has characterized a *Papilio* under the name of *Zenobia*, as follows:—

"Alæ nigræ, fascia lata alba, anteriorum interrupta, nec marginem at-"tingit. Margo sinubus albis. Subtus concolores, at posticæ basi "flavæ, nervis striisque atris."

"Habitat in Sierra Leone. Mus. Banks."

From a comparison of the type-specimen, which perfectly answers to the above description, with the specimens named as *Zenobia* in the National Collection, I find that it entirely differs from them, being identical with *P. Messalina* of Stoll (Suppl. Cramer, pl. xxvi., figs. 2, 2 b); the latter will therefore become a synonym of *Zenobia*, whilst our insect hitherto supposed to represent the Fabrician species will have to be re-named. I accordingly characterize it as

## PAPILIO CYPRŒOFILA, sp. nov.

3, Alæ supra nigræ; fascia discali continua lutea, anticarum venis intersecta, intus sub-integra vel in venas fusco indentata, extus semper inter venas dentata; posticarum extus denticulata, intus integra: margine externo inter venas luteo maculato, maculis posticarum multo majoribus: corpus nigro-fuscum, prothorace albo-punctato.

Alæ subtus pallidiores, fuscæ, inter venas nigro striatæ; venis nigris; fascia discali continua luteo-albida, anticarum intus integra, aliter velut supra, macula autem discoidali quadrata fasciam attingente; posticarum extus irregulariter marginata; macula interrupta sub-ovali apud fasciam discali; area basali fulvo-brunnea, venis striisque nigris: corpus albo maculatum, thorace nigro, abdomine fusco.

Exp. alar. unc. 4,9

Sierra Leone and Ashantee.

NEW SPECIES, &c., OF HETEROCEROUS LEPIDOPTERA FROM CANTER-BURY, NEW ZEALAND, COLLECTED BY MR. R. W. FEREDAY.

BY ACHILLE GUENÉE.

(Continued from page 43).

# FAMILY XIX. HYBERNIDÆ. Genus Hybernia.

HYBERNIA BOREOPHILARIA, Guenée, n. s.

H. leucophæariæ paulo minor. Alæ griseæ, nigro-atomosæ; lineis inæqualibus nigris: anticæ duabus mediis infra confluentibus: posticæ tribus sub-parallelis. Antennæ ciliis longis, distantibus. Fæminæ alæ valde reductæ, securiformes, pilosæ.

It has some analogy with our leucophæaria, but the wings are festooned, the inferior almost toothed. All the wings are powdery-grey, and more or less sprinkled with black atoms. Superior with four black lines, the two median of which are irregular, and converge inferiorily somewhat as in our Boarmia rhomboidaria. Inferior with only three lines, the median finer but more interrupted than the others: under-side somewhat paler, with the markings effaced. Body concolorous. Antennæ furnished with long, but slender and distinct, pectinations.

In some varieties the lines are partly suppressed, and lost in the atoms of the ground colour.

The Q has the wings greatly abbreviated, elongated and narrow, dilated suddenly at the apex, and furnished with bristly hairs on the margins. The black lines can be distinguished very plainly; three in number on the superior, and two on the inferior. Abdomen terminating in a long and strong oviduct; with a double row of black spots.

## Family xx. LARENTIDÆ. Genus LARENTIA.

LABENTIA CORCULARIA, Guenée, n. s.

Statura vix L. salicatæ, cui affinis. Alæ integræ, cinereæ, sub-nitentes; lineolis dentatis sub-interruptis griseis, mediis duabus saturatioribus, punctulis venalibus albis: posticæ supra lineis indistinctis, subtus albidæ, lineis interruptis. Palpi porrecti, longitudine capiti æquales. Antennæ pectinatæ.

It has some relationship with our salicata, of which it has scarcely the size, but almost the colour. One sees in it almost the same lines, which are equally denticulated and badly marked; the two median are better marked, or rather it should be said that the space they limit tends to become darker in their vicinity; small, very fine white dots follow the elbow line, and others indicate the subterminal; the fringe is lightly sinuated with blackish: inferior wings slightly paler, with the lines little distinct; beneath they are whitish-grey, with the same punctiform lines. Palpi forming a sort of beak almost as long as the head. Antennæ furnished with long and very fine pectinations.

The ? resembles the 3, but the antennæ are filiform.

#### LARENTIA INFANTARIA, Guenée, n. s.

Minima. Alæ sericeæ, cinereo-griseæ, nervis nigro albidoque punctulatis, lineis mediis saturatioril·us undulato-dentatis, puncto minimo cellulari: posticæ unicolores. Palpi prominuli, obtusi. Antennæ simplices.

It is the smallest of the Larentiæ, and does not exceed an Eupithecia in size. All the wings are silky, grey, very slightly greenish, the fringes concolorous: superior traversed by many fine sinuated and toothed lines, the two most evident of which border the median space, which includes two others and a dot; behind this space the nervures are dotted with black and pale: inferior a little paler, unicolorous above, with traces of lines beneath. Body grey, without markings. Palpi sensibly produced beyond the head, and forming a blunt triangular beak. Antennæ filiform; but I think the specimen before me is a female.

#### LARENTIA CATOCALARIA, Guenée, n. s.

Media. Alæ anticæ griseæ, lineis punctisque saturatioribus: posticæ aurantiacæ, margine lineolisque 2 vel 3 nigris: subtus omnes aurantiacæ, margine lineisque distinctissimis nigris. Antennæ pectinatæ.

This charming Larentia resembles in its colours our species of Catocala with yellow inferior wings. Superior blackish cinereous, with the ordinary lines of the Larentia; the two median darker: inferior beautiful bright fawn-colour, with a narrow toothed blacked border, and black fringe; two median lines sinuated, black; afterwards is the commencement of a third. Beneath all the wings are golden yellow, with a cellular dot, two fine wavy lines, the border, and the fringe, black; all the markings very distinct. Body grey above, whitish beneath, without mark ings. The antennæ of the \$\delta\$ are strongly pectinated; those of the \$\bar{\phi}\$ fliform. The latter sex differs only by its scarcely paler colour.

## Genus Eupithecia.

## EUPITHECIA CIDABIARIA, Guenée, n. s.

Alæ sub-angustatæ: anticæ apice prolongatæ, pallide virescentet tænia sub-discali completa brunnea, tunc spatio medio albo-virescente, lineoli denticulatis nigris notato, spatio sub-terminali lituris 3 brunneis distantibue posticæ griseæ, puncto cellulari lineolisque analibus nigricantibus.

It has almost the size and cut of our abbreviata, and its markings, which are very distinct, resemble those of certain Cidaria. Superior wings pale green and testaceous mixed, but this last colour is probably only faded green; the base and spaces between the lines green and black; afterwards comes a broad arouated and strongly interrupted brown band, touching the two margins, and denticulated axteriorily; the space which follows is greenish-white, traversed by several green denticulated lines, the last but one of which is mixed with black in several places, especially in the cellule, where that colour forms a very distinct arc; the rest of the wing is divided by the subterminal line, which is pale, fine, denticulated, and

1868.]

preceded in three places by a broad brown mark, the intermedian following it to the fringe, which is interrupted with black; these three marks are connected by a very fine, black, denticulated, scarcely visible line: inferior resembling those of many Eupitheciæ, that is to say, they are pale grey, with denticulated lines everywhere on the abdominal border, becoming soon obsolete, and with a small cellular dot: under-side of the four wings pale grey, with a cellular dot, and traces of several lines, of which the median is black and interrupted. Body green, mixed with black. The abdomen has a dark spot occupying the second and third segments, and small black dots on the following ones. Antennæ furnished with very long ciliations placed in pairs.

It was already in my collection. I have also before me two other species, but I dare not describe them from single, badly-preserved individuals.

### Genus Coremia.

## COREMIA ARDULARIA, Guenée, n. s.

Media. Alæ anticæ pallidæ, apice acuto haud falcato, lineis indistinctis: posticæ supra pallidissimæ absque lineis, subtus carneæ, lineis viz distinctis, nigro punctulatis, punctoque cellulari. Palpi prominuli. Antemmæ ciliatæ.

Smaller than munitata. Wings silky, very pale pinky-grey, with very indistinct traces of lines, save the two median ones, which are blackish upwardly and enclose a black dot, very near the extra basal; subterminal absent, preceded by a series of very small black nervural dots; below the apex is an indistinct greyish dash: inferior yet paler, without markings on the upper-side; pale flesh-coloured beneath mixed with black atoms, and with an indistinct median line formed of black atoms, and a cellular dot placed very near the costa. Body concolorous, without markings. Palpi prominent, as long as the head. Antennæ with very fine but long pectinations, filiform at the apex.

I have seen only the male.

One variety has the markings yet more indistinct, with the under-side of the inferior wings rosy, and without markings.

## COREMIA INAMENARIA, Guenée, n. s.

Parva. Alæ anticæ viridi-griseæ, pallidæ, lineis vix expressis punctoque cellulari, fimbria sub-vinosa: posticæ pallidiores, griseæ, lineis indistinctis; subtus vinoso-tinctæ, puncto cellulari nigro.

Superior wings entire, acute at the apex, greenish-grey (perhaps quite green in fresh examples); all the ordinary lines present, but very indistinct, the two median ones rather more sensible, and the elbowed line darker above; fringes, in good examples, violaceous, divided by a line in the middle: inferior wings whitish-grey, powdered with violet atoms; some examples have a faint trace of lines, with the fringe, as in the superior, preceded by indistinct geminated dets. The under-

64 [August,

side of all the wings is in part tinted with violet, with a cellular point and traces of two lines. Body concolorous, without markings. Palpi scaly, projected in the form of a beak. Antennæ of the female completely filiform.

I have seen only females of this small and insignificant species, and am not quite sure, without seeing the male, that it really belongs to Coremia.

## COREMIA YPSILONARIA, Guenée, n. s.

Statura C. munitatæ. Alæ anticæ maris pallide carneæ, vel griseovio-laceæ, fascia media brunnea Y-formi, litura nigra, punctoque minimo
cellulari: posticæ paleaceæ unicolores: subtus lineis indistinctis punctoque
nigris. Abdomen seriatim bipunctatum. Palpi incumbentes. Antennæ
pectinatæ.

Size and aspect of munitata. Superior wings dull whitish flesh-coloured or somewhat straw-colour, but very pale; the markings wood-brown, consisting of a space near the base terminated by a black oblique line, a median band constricted in its lower, open in form of a Y in its upper, portion, enclosing a little cellular dot placed between two black marks, of which the external forms a X, with filled-in triangle; there is also a series of little nervural dots, and an oblique sub-apical streak surmounting a faint brownish border: inferior wings slightly smoky, without markings: under-side of all the wings more obscure, especially the first half, which is limited by a vague line; inferior with a cellular point and two faint sub-terminal parallel lines, scarcely visible on the upper-side. Abdomen marked with geminated black dots. Palpi produced, but incumbent. Antennæ furnished with long pectinations in their basal three-fourths, afterwards filiform.

I have seen one male, considered by Mr. Fereday as a variety. Its superior wings are greyish-violet, the brown band rather different in form, the margin much darker: the inferior more yellow and more smoky: the under-side reddish, with the lines more distinct.

## COREMIA DELTOIDATA, Walker.

This species varies excessively, and the individual described by Mr. Walker is a very pronounced form. I possess a second, which has only one spot, commencing on the costa and constricted in the cellule, where it has a little black streak encircled with white. That which I consider as the typical form has, on the contrary, the band entire, with sinuated margins, paler in the middle, and traversed by two intermediate lines tending to form rings.

## COREMIA PASTINARIA, Guenée, n. s.

Alæ anticæ lignicolores, lineolis numerosis undulatis notatæ; vittis duabus albidis, linea brunnea divisis, spatium medium includentibus, hoc macula cellulari cinereo-punctato notato,linea sub-terminali alba irregulari: posticæ pallido-ochraceæ: subtus albidæ, lineolis incompletis.

Size of deltoidata. Superior wings entire, the terminal margin straight, not falcate; wood-brown, traversed by a multitude of slender undulated brown lines; the median space circumscribed by two narrow bands of a dirty white, each divided in the middle by a brown line; this space, which includes several dark lines (of which the exterior two tend to form rings), encloses, in the cellule, an ashy-grey spot, prolonged and constricted on the costa, and marked in its centre by a black dot; the sub-terminal line is whitish, but very irregular, thickened in its lower portion, and divided above by an oblique black mark; the fringe is preceded by black festooned marks, regular, but isolated by the nervures: inferior wings ochreousyellow, somewhat shining, also bordered by black festoons, but with only faint traces of lines; beneath they are whitish-yellow, with the same faint traces of lines formed by brown dots, and with a black cellular mark. Palpi rather broad, the second joint flattened and securiform, the third forming a very short tubercle. Abdomen marked with a row of geminated black dots. I have seen only the \$\frac{1}{2}\$.

(To be concluded in our next.)

LIST OF CAPTURES OF HEMIPTERA IN PALESTINE AND SYRIA;
TOGETHER WITH DESCRIPTIONS OF SEVERAL NEW SPECIES.

BY J. W. DOUGLAS AND JOHN SCOTT.

(Continued from page 33.)

25.—Calyptonotus æthiops, Doug. & Scott.

- §. Niger, opacus, dense lævissimeque punctatus; elytrorum membrana picea, basi extus striga brevi pallida notata.

  Long. 3\frac{1}{2} lin.
- §. Entirely black, not shining, very finely and thickly punctured throughout.
- Head—Antennæ, insertion of each of the joints piceous, extreme apex of 1st, 2nd, and 3rd joints with a few short, erect, piceous hairs.
- Thorax—Pronotum with a narrow, transverse channel behind the anterior margin; side margins reflexed; disc convex. Scutellum convex, slightly depressed, and transversely wrinkled towards the apex. Etytra less finely punctured than the pronotum. Clavus with three rows of punctures between the inner margin and nerve, the central one somewhat irregular, and between the nerve and the suture a single row; nerves somewhat prominent and unpunctured. Membrane piceous, with a short pale streak next the posterior margin of the corium at the outer angle. Sternum and Legs black. Thighs with a bent tooth on the under-side near the apex. Tibiæ, 2nd and 3rd pairs with black spinose hairs.

Abdomen, underneath black, in certain lights having a piceous appearance.

The description has been drawn up from a single  $\circ$  specimen, taken by sweeping low plants on the plains of Jordan in April.

Genus Mimicus, n.g., Doug. & Scott.

Corpus oblongum, depressum. Caput mediocre, porrectum, ad oculos

immersum. Antennæ graciles, tuberculis prominulis, articulo primo longo capitis apicem longe superante, secundo longiori. Oculi mediocres, paulo prominuli. Rostrum ad coxas mediasusque extensum, articulo primo capite paulo breviori. Pronotum transversum, sub-quadratum, margine antico capite latiori. Elytra medio longitudinaliter valde depressa. Pedes mediocres, femoribus anticis incrassatis, subtus spinis tribus gracilibus instructis, tarsorum posticorum articulo primo duobus alteris duplo longiori.

Oblong, depressed, sides sub-parallel.

Head porrected, (including the eyes) not so wide as the pronotum, middle lobe short, yet longer than the side lobes, the ends of the rostral channel projecting beyond its apex. Antennæ slender; tubercle large, distinct; 1st joint stoutest, long, three-fourths the length of the head, more than one-half its length reaching beyond the apex of the face; 2nd one-third longer than the 1st; 3rd rather longer than the 1st; 4th wanting. Eyes moderate, projecting a little, inserted close to but not touching the pronotum. Ocelli small, distant, on the posterior margin of the head near the eyes. Rostrum reaching to the 2nd pair of coxe, 1st joint not quite so long as the head, 2nd and 3rd sub-equal, each a little longer than the 1st, 4th sub-equal with the 1st.

Thorax—Pronotum transverse, the breadth rather more than the length, slightly convex, more so in front; sides straight, margins hardly perceptible, anterior angles rounded; anterior and posterior margins straight. Scutellum long-triangular, flat. Elytra scarcely so long as the abdomen, depressed along the region of the claval suture: Corium outwardly deflected: Membrane short. Sternum—mesosternum xyphus short, triangular, depressed in the centre; metasternum xyphus longer, with a middle keel. Legs—1st pair, thighs moderately incrassated, beneath with a channel on the anterior half, of which the inner edge has three contiguous spines, the 1st short, the other two long and thin throughout: tibiæ with distant fine spines, the 1st pair (which are straight) on the underside only: tarsi long, slender; 1st joint on the 1st and 2nd pairs longer than the 2nd and 3rd joints together, on the 3rd pair twice as long; 2nd and 3rd joints in length sub-equal.

This genus has a great *prima facie* resemblance to Calathus (Coleoptera); its affinities seem nearest to our new genus Lamproplax.

## 27.—Mimicus nitidus, Doug. & Scott.

piveis, antennis, rostro pedibusque pallide piceis; membrana lucida, albida, basi nigra. Long.  $2\frac{1}{2}$  lin.

Head delicately punctured. Antennæ pale piceous, pubescent, and also with some fine projecting hairs. Eyes rufous. Rostrum pale piceous.

Thorax—Pronotum finely punctured, disc anteriorly smooth. Scutellum with irregular punctures. Elytra dark piceous: clavus with three irregular rows of punctures, posterior margin bright piceous; claval suture broad, distinct: corium, anterior and posterior margins paler piceous, the outer nerve strong on the basal half, the other nerves fine; the punctures next the claval suture in two or three rows, and rather deeper than those which cover the disc, which are irregular but close: membrane lustrous, whitish, diaphanous, broadly blackish at the base. Sternum deeply punctured throughout. Leys piceous tibia and tarsi paler.

Abdomen shining, longitudinally crenulate, delicately punctured.

Described from a single specimen,  $\mathfrak{P}$ , taken on the road from Nablous to Nazareth in April.

## 30.—Lasiocoris Flori, Doug. & Scott.

Q. Elongatus, sub-ovatus, pallide testaceus, dense diluteque fuscopunctatus; capite nigro, capillis longis erectis instructo; antennis crassis,
capillis sub-depressis, alteris longis erectis admixtis, articulo ultimo excepto,
dense vestitis; articulo 1<sup>mo</sup> nigro, 2<sup>do</sup> testaceo, apice fusco, 3<sup>tio</sup> nigro, basi
testaceo, 4<sup>to</sup> brunneo; pronoto campanulato, capillis longis erectis vestito,
margine ciliato, disci dimidio antico nigro, posteriori stramineo, marginibus
lateralibus anguste flavis; angulis posterioribus nigris, nitidis, impunctatis; scutello nigro, sub-convexo, medio depresso, carina postice instructo;
corio flavo, capillis sub-erectis vestito, macula magna, rotunda, juxta angulum
posteriorem interiorem, necnon membranæ sutura, nigris; membrana nigra,
margine exteriori late albo; sterno, pedidus, abdomineque nigris.

Long. 4 lin.

- ♀. Elongate, somewhat oval. Yellow, thickly and finely punctured with black.
- Head black, finely punctured and clothed with long, fine, erect hairs. Antennæ stout, the first three joints clothed with shortish sub-depressed hairs, interspersed with long erect ones; 1st joint black; 2nd brownish-yellow, apex fuscous; 3rd black, base brownish-yellow; 4th brown. Eyes, viewed from above, somewhat oval, from the side hemispheric. Rostrum pitchy-black, base of each joint very narrowly brown.
- Thorax campanulate. Pronotum clothed with long, fine, erect hairs; ciliate; apical half black, thickly punctured; basal half yellow, thickly and finely punctured with black; extreme edge of the lateral margin yellow; posterior angles

68 [August,

black, not punctured, shining. Scutellum large, triangular, flattish convex, black, thickly punctured, depressed in the middle; behind the depression a round callus, to which is attached a distinct keel extending to the apex. Elytra-clavus yellow; between the inner margin and nerve (except a small spot at the base) black as far as the sutural angle; the nerves with a row of punctures on each side. Corium yellow, finely punctured with black, and clothed with almost erect hairs shorter than those on the pronotum; extreme base, a large round spot next the posterior inner angle, and the membrane suture black, the colour in the latter widest at the apex. Membrane black; outer margin broadly white. Sternum black, thickly and deeply punctured and clothed with a yellowish pile. Legs-coxæ black, apex brown, at the base, outwardly, a brown spot. Fulcra black. Thighs black, clothed with long, fine, almost erect hairs; 1st pair beneath with three or four small teeth, of which the penultimate, from the apex, is the longest. Tibiæ-1st pair brown-yellow, clothed with long, fine hairs, apex black; 2nd brown, with long, stout, spinose, black hairs, interspersed with longer fine ones; apex black; 3rd black, the hairs as in the 2nd pair. Tarsi clothed with pale hairs; 1st and 2nd pairs brownish-yellow, apex of the 1st and 2nd joints piceous; 3rd joint of all the pairs and claws black.

Abdomen—beneath black, very thickly and finely punctured, and clothed with a yellowish pubescence.

Plains of Jordan, on low plants while sweeping for spiders and Coleoptera in April.

We have named this insect after Dr. Flor, from whom we have received several acts of kindness, and whose work, the "Rhynchoten Livlands," has placed him in the first rank of the authors on *Hemiptera*.

This species is very closely allied to the *Beosus æneiceps* described by Bärensprung in the Berlin. Ent. Zeitschrift for 1859, page 333, pl. 6, fig. 5, but it may easily be distinguished from that insect by the differences in the antennæ and legs.

(To be continued.)

Cathormiocerus socius a true British species.—My friend Mr. Montague, in the early part of the summer of last year, captured a single male specimen of a Strophosomo-Trachyphlœoid Curculio (now, thanks to his liberality, in my possession) at Freshwater, I. of Wight, which, on its being brought before my notice, I at once felt inclined to refer to the much-vexed species above-named, but refrained from bringing forward, as I was unable to reconcile it with the description in Schönherr's Syn. Ins., vii. (Supp.), 121, 2, on account of its possessing certain most evident characters in the structure of its antennæ and the bristly clothing of its elytra not referred to by that author.

The recently published work on certain of the Otiorhynchida by Georg Seidlitz (Berlin. Ent. Zeitschr., Jahrg. xii., 1868, Beiheft), however, enables me now to bring it forward without further hesitation.

C. socius, originally described (as above referred to) by Schönherr, with the sole ocality "Anglia. Mus. Dom. Walton," has always been regarded with doubt as British, not only on account of its genus being apparently exclusively South-European, but because there was no reference to it in Mr. Walton's "Notes," and no representative of it (apparently) in his collection (the types of which are now n Brit. Mus.); and, possibly, because, in the Stettin. Ent. Zeit., 48, p. 346, he states that the origin of the specimen ceded to Schönherr was unknown to him. Seidlitz, 1. c., 134, notices this remark of Walton, and (note) explains that by mistake socius is quoted in the Stett. Ent. Z. as horridus; and from these data he reasonably considers the reference of socius to England as founded on error. Seidlitz's only locality for the species is the Sierra Nevada.

Mistake seems to have followed C. socius hitherto in all its references; but I magine that the I. of Wight specimen above-mentioned will enable me to substantiate the authenticity of the species as British. On inquiring at the Brit. Mus. I am informed that Walton's single specimen was retained by Schönherr, who founded the species on it. This agrees with the statement by Schönherr, who Schönherr's type-example is labelled "Anglia. Walton." This type appears, according to Schöltz, to be an abraded male, structurally entirely identical with males from the Sierra Nevada, with the exception of an evidently individual abnormal formation of the rostrum; and, according to the same author, it entirely agrees with Schönherr's description, with the exception of reference to this peculiarity, and to the structure of the scape of the antennæ.

There can be no doubt, however, that Mr. Walton possessed two specimens, both abraded, of this insect; since, on the sale of his general collection, Mr. G. R. Waterhouse purchased, amongst other insects, one labelled (erroneously) "Compsis Waltoni," in Mr. Walton's own handwriting, which is distinctly (being a male, luckily) identical with my recent I. of Wight example. Some accidental confusion of labelling, possibly at a time when Mr. Walton was not so well acquainted with these insects, must have taken place, in order to account for this palpable mistake (the insect in no way agreeing with the well-known C. Waltoni); and it is evident from Mr. Walton's statement in the Stett. Ent. Zeit. that he knew nothing of his possessing this second specimen,—which, indeed, is so exceedingly bereft of scales and bristles as to be likely to escape attention.

C. socius seems distinguishable from all its congeners but the Pyrenæan and instantly separable cordicallis by the shape of the antennal grooves, which are not linear, but pit-like, irregular, and conspicuous from above. In the male the scape of the antennæ is suddenly and angularly dilated close to the base, and curved. In a fresh example, like mine, the thorax has the sides and a middle line yellowish, and the elytra densely covered with scales, presenting a dull and somewhat tesselated appearance, the interstices being set with light bristles. The only British species with which it could by accident be confounded is Trachyphlæus squamulatus, from which its rather larger size, longer and less obtusely rounded elytra, &c., will serve to distinguish it,—apart from its evident structural differences.

Seidlitz remarks that the granuliform, connate, somewhat shining clothing of the under-side of all the species of *Cathormiocerus* will always serve to distinguish them from their allies.—E. C. Rye, 7, Park Field, Putney, S.W., *July*, 1868.

70 August

Note on Phosphænus hemipterus.—The following is an account of the capture of the insects recorded by Mr. Rye in the last No. of the Ent. M. Mag.

Whilst watering plants in my garden late on a hot evening in May last, I observed a spot of phosphorescent light at the foot of a wall, but failed to detect its origin. On 12th June, when again watering the garden, after dark, I again noticed a similar but moving light; smaller, though not less bright, than that of a glow-worm. This light I found to proceed from an insect then unknown to me, possessing two equal luminous spots at its tail. I kept it alive for six days, but it did not seem to eat anything, or to notice food, though engaged in restless unceasing explorations of its prison, as if in search of something. Each night the light grew fainter, which I attributed to physical exhaustion. On the 18th June a second example was found by one of the servants, crawling over a white cloth left on the bricks. This, though finer than the first, gave a smaller light, but was equally active. Occasionally it moved its short wing-cases, but its long and substantial antennæ appeared to be the more important and sensitive organs, acting as guides and aids. When they became laden with moisture or dirt, the insect began at the base, and combed and cleansed each to the very last joint; when up they went with a flourish, and recommenced their incessant vibrations. In crawling along the edges of leaves the insect used its mandibles as assistants. At first I thought it was going to eat, but found that it was only as a means of clinging more closely in a dangerous position that these extra limbs were used. Also its long flexible body became by turns lever, balance, drag, propeller, or claw. On the upper-side the colour was so exactly that of the earth that, unless in motion, the insect was most difficult to see,-it was somewhat paler towards the tail; and beneath, between the joints or rings, showed a decided pink.

Against the light the semi-transparent tail showed two black spots where the light was fixed, and these were equally bright above and beneath when shining. I believe I am safe in asserting that only when disturbed the insect showed its light, and then not for a continuance, or with an even glow. This second specimen I unfortunately lost; but, on the evening of the 25th June, I found a third example in the water-butt; and the following evening a fourth near where the first was found.

I can discover no means by which these insects, or any larvæ, can have been introduced into our garden—a small square between four high walls; except that in June, 1865, I brought home some ferns from the Jersey hedges: but, to diminish their weight, all loose earth was shaken from the roots, which, besides, after being several days in a tub of water, were packed in wet rags for the journey; and again stood in water for some days previous to planting. I can scarcely imagine, therefore, that these insects can have then been introduced, in any stage, especially as they are known to have the carnivorous habits of the glow-worm, and do not frequent plants.—Catherine C. Hopley, 6, Albion Street, Lewes, July, 1868.

Notes of spring Rhynchophora on the south-east coast.—At the beginning of the present month I had a day's collecting on the Deal sand-hills, but without any great success. Phytonomus fasciculatus appeared under its accustomed "crane's-bill," and near it Caliodes exiguus. C. geranii I have never found in East Kent.

went to Deal on the chance of finding Ceuthorhynchus tarsalis in the locality there it had occurred a few years ago, and beat diligently every food-plant I could see, but without success. About a fortnight afterwards the insect turned up upon es S.E. R., between the Hythe and Shorncliffe stations, not a plant of Sisymbrium eing, so far as I could ascertain, within sight. I only procured a single specimen. Opon the same bank, at various spots and various times since the 1st of May, have courred the following:—Ceuthorhynch(ide)us punctiger and Chevrolatii (=respecively, I suspect, to marginatus and troglodytes); C. terminatus, the first time I have een the insect alive; Tropiphorus carinatus, a very hermit among beetles, and pparently quite indifferent as to his quarters, so that there be no partner to have them. I have taken it repeatedly during the last ten years,—from bare halk and long grass, damp wood and dry banks,—and at almost all seasons: moss in the winter months affording the best chance; but I never found more than me at a time, in spite of strict searching.

Phytonomus suspiciosus is scarce hereabouts; Apion cracce, also scarce; but stryptidus equiseti and Sitones cambricus are not very rare in this neighbourhood. may also mention that both Poophagi have appeared in a new locality, a private vatercress bed belonging to a friend and neighbour of mine; which is the more atisfactory, as the old habitat is quite hopeless—the cress having been entirely unsted by stinging-nettles.

I have just beaten a red-wing-cased Harpalus servus, Sturm, from hazel; on a chalk bank near Covert Wood, East Kent; and make a note of this, under the impression that the insect has hitherto been recorded only as a littoral species, and, therefore, not amongst the tree-climbing Geodephaga. I am ready to exhibit he specimen should any doubt be felt as to its correct identification. I have no such doubt myself, having examples from Romney Sands wherewith to compare t.—W. TYLDEN, Stanford, Hythe, 19th June, 1868.

Capture of Mesites Tardii on our north-eastern coast.—During the first week of this month, Mr. Lawson and I went in search of wood-feeding beetles in Hayburn Wyke, six miles north of Scarborough. The first likely-looking tree we came to was an alder, which had been blown down, and partially lay across the "beck." We set to work, taking off the loose bark, and were astonished to find Mesites Tardii by hundreds. The beetle was also making large galleries in the solid wood, in which all stages of the insect occurred together.

The next tree we tried was a dead ash; and in it was the beetle, in equal abundance, accompanied by Clerus formicarus. We next found it under loose bark of maple; also under loose bark of oak; also in the solid wood of the roots of the latter tree, which had been cut down about two years;—so I presume no tree comes amiss to the beetle. In my experience of wood-feeders, I have never before met with any species so numerous.—T. WILKINSON, 6, Cliff Bridge Terrace, Scarborough, June 26th, 1868.

[This is pleasant for the "Atlantic Fauna" theory.—E. C. R.]

On the fecundity of the Queen-Bee.—At the meeting of the Entomological Society on the 4th of May, a paper on the economy of the Hive-Bee, by Mr. Desborough, 72 [August,

was read; among other interesting matter, the author's experience as to the fecundity of the queen, during life, was given as 108,000 eggs. This, to any one uninitiated in the wonders of the hive, would appear to be a very large number. Mr. Desborough in his prize essay, I believe, calculated the duration of the life of a queen as averaging about five years, giving an annual deposition of eggs at about 21,600. Since this estimate was published, in the report of the Proceedings of the Society, the Devonshire Bee-Keeper has published his experience, and it is truly marvellous to contemplate the two results. We are not told by Mr. Desborough what was the particular description of time that furnished these results. We may confidently rely upon the information of both parties; but we cannot but feel certain that either the calculations were made under very different circumstances, or that the fecundity of queens varies immensely.

According to the experience of the learned German Apiarian, Dzierzon, the average duration of life in the queen is four years, and that a prolific queen lays not less than 1,000,000 eggs; and this opinion is endorsed by the Devonshire Bee-Keeper. He further informs us that it is nothing unusual to see from 15,000 to 20,000 cells occupied by brood during three months of the year. Then we are to add to this period the spring and autumn months, when breeding takes place; during the first in an increasing ratio, and during the latter in a decreasing ratio; until, in October or November, it entirely ceases. Then we are to consider that, during this period, the tenants of the brood-cells are removed every three weeks. From this calculation we are enabled to form some idea of the fecundity of a prolific queen.—Fredk. Smith, British Museum, June, 1868.

Description of the larva of Eupithecia consignata, Bork.—Towards the end of May, Mrs. Hutchinson, of Grantsfield, kindly sent me seven eggs of Eup. consignata, laid by a 2 taken in Herefordshire by her daughter. They all hatched in the course of a few days; and I have reared six larvæ, all of which have now spun up.

I have much pleasure in sending you a description of this hitherto almost unknown larva.

"Long, slender, tapering slightly towards the head. Ground colour grassgreen, slightly tinged with yellow. Segmental divisions yellowish. Central dorsal line very slender, dark purplish-red, enlarged at the base of each segment into a spear-head shaped blotch. Dorsal blotches bordered with yellow, and becoming confluent on the capital and caudal segments. Head somewhat broad, green, very slightly marked with purplish-red.

Spiracular line puffed, rather paler green than the rest of the body; blotched into purplish-red on a few of the central segments, and more or less bordered with straw colour. Central ventral line whitish. Body somewhat wrinkled, studded with a very few short, slender whitish hairs. Fed on apple. Full-fed June 14th—19th."

Some few years since I beat two of these larvæ from oak in Suffolk, and another from hazel in Hampshire. I suspected at the time that they were the larvæ of Eup. consignata; but, as they died in the pupa state, I was unable to verify my suspicions. This larva closely resembles that of Eup. exiguata.—H. HARPUR CREWE, The Rectory, Drayton-Beauchamp, Tring, June 22nd, 1868.

Note on the pupa of Eupithecia consignata.—In the last number of the "Entomologist," Mr. Crewe gives a description of the larva of this species. Through the generous kindness of Mr. Hutchinson, I have also reared a few larvæ. My object in writing these few lines is to draw attention, not to the larva, but to the pupa. It is quite unlike that of any Eupithecia with which I am acquainted. It is more like that of a Tortrix than of a Geometra, very long and slender, and twisting the abdominal portion in a very active manner. I think there is little doubt but that the pupa might be found in orchards, under moss, or behind loose bark. The admirers of the genus Eupithecia are greatly indebted to the discoverer of the larva of this very pretty species.—J. Geeene, Cubley Rectory, Sudbury, Derby, July, 1868.

[Mr. Crewe's contribution reached us too late for insertion in the July number of the Magazine; and it is contrary to our rule to print any communication of this nature that may have already appeared in another publication. Mr. Greene's note renders it advisable that we should relax the rule in this instance. We ask our contributors to bear in mind, that unless their papers be received by the 18th of each month, they stand little chance of appearing in the following number.—Eds.]

Observations on the habits of the larva of Zygæna nubigena.—Through Mr. Birchall's kindness in sending me the eggs, I am enabled to give some account of the early stages of this species, but the discrepancies that exist between my account and those of other observers show how desirable it is to make further investigation.

A small batch of eggs (small because I could not undertake many) received July 4th, 1867; the larve hatched on the 10th of the same month. Finding, from the "Chapter on Minos," in Stainton's Annual for 1862, that it was likely either Thymus serpyllum or Pimpinella saxifraga would prove to be the proper food, I procured both, but there was no doubt as to which these larve preferred; the thyme was eaten at once, whilst I could not see that the Pimpinella was even tasted.

These larvæ, about ten in number, grew very slowly, and (with one exception, who had grown to twice the size of his fellows, but came to grief,) were no bigger than a leaf of the wild thyme, and indeed of pretty much the same figure in outline, when they settled down for hybernation about the beginning of September. They assembled in two little groups of four or five each, and spinning some silk on the under-side of the stoutest stems of their food-plant, rested quietly till near the end of February. Mr. Birchall had warned me that in their native locality they probably had little experience of frost, so I placed the flower-pot with large glass cylinder, which enclosed the plant of thyme, in a garden-frame under a high wall with south aspect; there was no hotbed in the frame, but as it received all the rays of the sun from about 9 a.m. to 4 p.m., a considerable amount of warmth was kept up in it, compared to the temperature outside. In fact the thyme continued to grow and thicken all through the winter, until my little larvæ were quite hidden; and it would at any time have taken a sharp eye to distinguish them, whilst hybernating, from a withered thyme-leaf, so much were they of the same colour, and furnished with little hairs of the same length.

About February 20th, 1868, I noticed four or five of them moving in the sunshine, and some of the tender shoots of the thyme showed marks of their jaws being at work; and at this date I noted down the following description:—Length, \$\frac{1}{6}\$ inch; colour, all over a pinkish-brown; some faint traces of sub-dorsal rows of black and yellow spots; hairs arranged in little tufts. March 7th: larvæ sickened for moulting; about 14th all appeared in a new dress; colour immediately after moult a dull blackish rifle-green, the upper spots showing like black velvet, and the lower row being now distinct and of a primrose-yellow; some of the hairs black, some whitish. As they fed and grew, their colour became lighter, and about this time four of the nine disappeared—I suppose having sickened and died; but the thyme was now so dense I could not find them. April 1st: the five survivors moulted again—as before, coming out almost black, and gradually paling to dark olivegreen. April 15th: they moulted again (as I have before noticed in the case of Z. trifolii, the moult takes place by the skin splitting all along the back), and again came out darker than before.

About the end of April they had attained their largest growth,—somewhat less, I imagine, than would have been attained in a state of nature, the heat of their position hastening their changes; they were of the usual fat, soft Zygwna figure, measuring in length, when in motion,  $\frac{a}{2}$  inch, when at rest  $\frac{a}{2}$ . Colour all over a rich dark olive-green; dorsal line dirty whitish, showing broadest and palest at commencement of each segment; on each side of it a row of eleven black velvet round dots placed on front of each segment from 3rd to 13th; below this a row of eight yellow spots on segments 4th to 11th, placed on the hinder part of the segments in such a way that the yellow spot of each comes just below the black dot of the segment behind it; the spiracles black; the belly rather paler than the back; the usual dots not visible; each segment bearing in a transverse row eight fascicles of stiff white hairs, five or six in a fascicle.

I noticed throughout their growth these larvæ moved and fed with most energy in the sunshine.

May 2nd. The four I retained begin to spin, fixing themselves on their glass cylinder, and not on their food-plant; two placed themselves horizontally, and the other two in a perpendicular position; the cocoon is dirty-white in colour, glistening, and shorter—more truncate in form than that of trifolii or filipendulæ; and the pupa is brown in colour, the wing-cases being rather darker than the body, and different individuals varying in depth of tint. When the moths, which are rather under-size specimens, emerged (May 29th—June 1st), the empty pupacases were not left sticking in the cocoons, but had fallen down near them. I was not lucky enough to see a moth in the act of emerging.

With Mr. Buckler's kind assistance I have drawn up a short account of the various descriptions and figures we could obtain of the larva of *Minos* and its supposed varieties, from which it will be seen that the Irish larva is not quite like any hitherto recorded.

In the Annual for 1862 there is Zeller's account of whitish larvæ on Pimpinella, and yellow larvæ found later on Thymus; also Freyer's account of yellow, white, and whitish-blue larvæ, all of which ate Pimpinella by preference; also Herings fuller description of the larva on Thymus, which comes nearer to our larva than the others, though the ground-colour is yellow instead of olive-green, and there is

no mention of yellow spots. This description, however, agrees to some extent with Hübner's figure of one variety, represented by him as citron-yellow, with a subdorsal row of brown spots, and a broad stripe of yellow paler than the ground running just below them. Hübner has also figured a whitish variety with blackish spots, but placed on the hinder part of each segment. And Boisduval gives in his figures the ground-colour as pale yellowish or citron-green, with two black dots instead of one on each segment, and yellow spots above, not below them, a black dorsal line and some black curves above the legs.—John Hellins, Exeter, June 10th, 1868.

Notes on the earlier stages of Acontia luctuosa.—I am greatly indebted to Mr. Howard Vaughan for kindly giving me the opportunity of figuring and describing larvæ of this species, as well as for furnishing some interesting details concerning their earlier stages.

The eggs were laid on the 7th and 8th of June, 1868, and hatched on the 16th and 17th of the month.

The young larvæ at first appeared to be veritable loopers, twelve legs only being visible; but, as they grew larger, the other legs became apparent, though still in walking they did not use the first pair of ventral legs.

They appeared to be nocturnal feeders, eating the flowers and seeds, as well as the leaves, of *Convolvulus arvensis*; they reposed, lying along and closely embracing the stems of the food-plant, close to the ground, and in this position would easily escape observation.

The full-grown larva is about one inch and a quarter in length, slender, and stoutest in the middle, and tapering a little towards the head (which is smaller than the second segment), and more to the posterior extremity; the folds and divisions moderately indented on the first four or five segments, but hardly noticeable on the remainder.

The two hinder pairs of ventral legs more developed than the two preceding pairs.

The ground colour on the middle of the back is a pale greyish-ochreous, brownish-grey, or reddish-grey, the sides being darker and browner; the dorsal stripe tapers at each extremity of the larva, but is narrowest on the anterior segments, the stripe itself being of the pale ground colour above-mentioned, but faintly outlined interruptedly by short dots or lines of black; sometimes toward each segmental division it is delicately freckled with a slightly deeper tint of the same, and, in some examples, two short black streaks, rather thicker than those that outline the stripe, appear at the beginning of each segment, almost forming a V, pointing forwards.

The pale region of the back assumes a kind of chain pattern from being bounded on each side by a rather broad sinuous border of dark grey-brown, on which are placed the anterior pairs of tubercular dots, being large and very pale greyish, delicately margined with blackish; the posterior pairs small and black.

The sub-dorsal stripe is but little paler than the dark ground colour of the sides, and chiefly towards the head, and just a little at the beginning of each segment, the stripe is edged with a line of dark brown; beneath this, again come three other dark brown lines, the lowest of which is the spiracular, and is thicker

than the others; the upper two are slightly sinuous, and the second bears a pale tubercular spot at the anterior part of each segment, and also touches the spiracular line in the middle of the segment.

The spiracles are black and circular. Below them is a broad stripe of very pale brownish-grey, edged above with a paler thread, and below with a little darker stripe of reddish or greyish-brown, followed by another close above the legs of paler greyish-brown. The belly slightly deeper greyish-brown, with a central brown stripe bearing on the middle of each segment beyond the fourth a blackish round spot. Legs pale brownish-grey; prolegs similar, and with a dark brown dot above their fringes.

The head slightly hairy, and very pale greyish, having on each side four lines of black dots in continuation of dark stripes on the body. The second segment has a semi-lunar dull dark brown plate, through which run conspicuously the dorsal and sub-dorsal pale stripes.

The pupa is subterranean.-WM. BUCKLER, Emsworth.

Moths at Nettles.—The Rev. J. Greene, in his interesting little "Insect Hunters' Companion" mentions, among other plants, nettles as a good bait for moths, which, he says, appear to imbibe something not from the flowers but from the leaves: why they evince a partiality for the latter he could not understand. Whether the reason has since been discovered and published I know not, but I have satisfied myself that it is not the leaves "pur et simple" which attract the moths, but that their efficacy is owing to a little white plant-louse which sometimes covers them, and the exudations commonly termed "honey-dew" is what the moths are so fond of; that this is the cause I have further proved by the fact that, whilst moths were plentiful on some Aphis-covered nettles, not one was to be seen on adjoining but clean plants.

Most of the moths which come to "sugar" also come to nettles, though some species, apparently, are not so fond of them as of sugar, for they come more sparingly.

On one or two nights last month, when I paid a visit to some nettles in a field close to the Wallasey sandhills, I found moths literally swarming at them, as fast as I boxed those I wanted, some other moths came to take their place. Certainly, the majority of them were such commoners as A. exclamationis, X. polyodon, &c., but I took pretty freely corticea and albicolon, as well as several each of L. littoralis, L. comma, L. impura, L. lithargyria, A. putris, H. dentina, G. trilinea, A. basilinea, M. strigilis, N. plecta, N. triangulum, N. C-nigrum, X. rurea, N. augur, A. valligera, L. pallens, H. adusta, C. morpheus, N. festiva, E. lucipara, one C. umbratica, A. gemina, and some other common species.

This list does not include many "good things," but such as they were, they were all the species to be got at sugar in that neighbourhood, at that time, so that nettles, in more favoured localities, may prove better worth working. It is certainly a very economical method of obtaining moths, but I find that "sugar" is a more powerful bait, for when laid in the neighbourhood of the nettles, the moths abandon them for the stronger smelling compound.

Several of my friends complain that they get nothing at sugar; why, I cannot conceive, unless it is that they choose unfavourable nights for their expeditions; I

ave found moths very common at sugar this summer, indeed, I have never seen lbicolon, corticea, and littoralis so common as they were last month; it is also a ery early season for many things; valligera, in particular, I have never seen before a end of July, and it is common in August with tritici at ragwort flowers, whilst namy of the specimens which I captured last month were more or less worn.

The cortices vary wonderfully in colour and markings--one which I took is early black, whilst others of the same sex (males predominate) are very pale.

I would recommend incipient collectors to examine at night all kinds of plants affested with Aphides, and not confine their attention solely to nettles, for the honey-dew" found on other plants is also very attractive, but in various degrees.

I am prompted to send you these remarks in the hope that they may prove seful to some of your readers, remembering, as I do, when I began collecting, how he sight of a fine bed of nettles made my heart jump, but I was continually oomed to disappointment, never having succeeded until lately in finding any moths in the nettles, as mentioned in Mr. Greene's little work.—E. L. RAGONOT, 130, onway Street, Birkenhead, July 8th, 1868.

Lepidoptera bred, §c., in the spring.—I began the year by breeding Eupithecia bipunctata on January 27th (forced), from larvæ collected in Coombe Wood. I ave been very successful with this species, as—though Mr. Harpur Crewe says nly one in every ten escapes ichneumons—I succeeded in breeding more than half line; the last emerged on April 28th, or three months after the first!

In the early spring I collected, near Rugby, a number of spruce-fir cones, from thich I have bred a fine series of Coccyx strobilella.

On Wimbledon Common Adela cuprella has been out in far larger numbers han last year; while, at the sallows, Taniocampa gracilis and rubricosa were at ome as usual,—and a specimen of the latter occurred at the lamps.

During April, Clostera reclusa, Eupithecia minutata, and others, appeared in breeding-cages, from larvæ taken on Wimbledon Common and Combe Wood ast autumn.—G. B. Longstaff, Southfields, Wandsworth, S.W.

Collix sparsata, &c., near York.—In five nights' collecting during last week I btained a good series of C. sparsata in very fine condition; also series or pairs of cost of the following:—H. unca, by sweeping long grass; on the wing, P. syrinaria; at sugar, amongst others, A. leporina, A. rumicis var. salicis, L. pudorina frequent), X. hepatica, M. abjecta, M. anceps, Agrotis suffusa (one, apparently just nt), D. cucubali, and A. adusta.—T. J. Carrington, 1, Melbourne Terrace, York, Tune 13th, 1868.

Capture of the larva of Polia nigrocincta.—I had the good fortune, this afternoon, again to find the larva of P. nigrocincta.—N. Greening, Isle of Man, 19th June, 1868.

Note on Colias Edusa.—I found a caterpillar of C. Edusa feeding on Melilot ast October at Charmouth; it changed to a pupa on our journey home, and died n the act of emerging at the end of March.—C. W. Dale, Glanvilles Wootton, 3th June, 1868.

[This interesting fact tends to prove that Edusa in this country is doubleprooded, or partially so; or that all the examples taken in spring and early summer have not necessarily hybernated.—EDS.] 78

New locality for Lycana Arion.—It will be interesting to British Lepidopterist to bear that Mr. Wells, a pupil of this college, took a specimen of L. Arion las year near this place; but was not aware of his good fortune until I discovered the insect amongst his butterflies. Yesterday we took a walk to the same locality, and found eight fresh specimens.—E. Dembski (French Master), The College, Chelten ham, 2nd July, 1868.

Elachista paludum bred.—I have had the pleasure of breeding Elachista paludum, from larvæ I found here in Carex (? riparia). I first found the larvalast autumn, and sent one up to Mr. Stainton; but it having died before reaching him, he could not decide it, but inclined to the belief, suggested by myself, that is was the young larva of Gelechia arundinetella. However, on searching this spring I found the larva more fully matured, and saw at once they were Elachista: it due time paludum appeared,—much to my delight. I do not recollect seeing any other locality for them than Ranworth and Beccles, where they were found by Mr. Winter. It is possible that, if specially looked for, they may turn up elsewhere They are scarce, and difficult to find, as they seem to grow up all at once, and are fearfully subject to ichneumons, &c.—John Sang, Darlington, June 15th, 1868.

Captures of Lepidoptera at Howth.—During Whitsuntide, Mr. Gregson and spent a few days at this locality for Irish novelties; and, by dint of hard an weary work, we succeeded tolerably well. We both took Dianthweia Barrettii This cannot be, as has been suggested, a form of conspersa; it flies in quite a different manner, and, when the wings are closed, the blotch—like that in H. abri plicis—is very striking. We each got three examples. Below I give a summary of our captures, and remark that the single specimen of the rare Taleporia publicornis was taken by Mr. Gregson; this is quite new to the Irish list, and has been found in only one English locality.

C. porcellus, S. philanthiformis, L. caniola and complana (larvæ), O. bidentata (light var.), A. subsericeata (common) and promutata, E. venosata and constrictata M. galiata, A. plagiata, M. furva, D. capsophila, Barrettii, and cucubali, H. nimbella P. subornatella, S. littorana and sp. (?), S. Penziana (pupa), E. albicapitana and atricapitana, A. Baumanniana, T. pubicornis, P. roboricolella, D. marginepunctella D. subpropinquella and capreolella (bred), G. mundella, instabilella, and artemi siella, B. grandipennis and fusco-cuprea, G. tringipennella, C. discoidella and gryphipennella, E. Gregsoni (?), collitella, and consortella, P. pterodactylus. I have a larva now feeding which may be that of D. Barrettii.—J. B. Hodgkinson, Preston July 7th, 1868.

Sesia myopæformis in Hawthorn.—Have any of the readers of "The Magazine' reared this clearwing from hawthorn? In the piece of ground at the back of on house I, a few days since, met with some empty pupa cases protruding from the trunk of a double red-may tree; these are evidently those of myopæformis, which is common enough in some neighbouring apple and pear trees.—H. G. Knages Kentish Town, July 10th, 1868.

Agrotis cinerea at Folkestone.—About two months ago I captured a female example of this local species in the Warren at Folkestone. I mention this, partly

ecause I am under the impression that the insect has never been recorded as having courred at Folkestone, and partly on account of the sex of the individual; female inerea not being, I believe, caught every day.—ID.

68.

Note on Hadena atriplicis, §c.—I have lately reared a fine series of Hadena triplicis, from eggs deposited by a female caught at Cambridge last year. I would not have troubled you with this communication had not a well-known ambridge entomologist informed me that his bred specimens of this insect were ways both small and badly coloured; while mine, on the contrary, are of the rerage size, and well marked.

Last week I took a male *H. dominula* at Lustheigh, in good condition. From the fact that this insect has been captured at Exeter, Teignmouth (i.e., Great and ittle Waldon), and that it is common at Ashburton, I am inclined to think it is the moment throughout the moorland parts of the county.—Charles Grinstead, orella, Torquay, 22nd June, 1868.

Results of a day and a night's collecting in Sherwood Forest.-The old forest is ow in its glory, and well worth a visit from even the most apathetic of Nature's lmirers. For miles you may wander among grand oaks, some "stag-horned," at majestic in their ruin; others in the full vigour of life, interspersed with the aceful birch, whose tall, silvery stems gleam white far away in the distance; ith here and there an alder, mountain-ash, or white-thorn. Few flowering plants re seen, the ground being chiefly covered with fern, five or six feet high, or in the oen places with tall, waving grass. Among the latter we sprung a few Euthemonia ussula, all apparently fresh from the pupæ: they were easily caught, flying very zily. A. Adippe was just out, but in the glowing sunlight a chase was not very greeable: we got, however, about a dozen specimens. From the oaks we beat few specimens of Conopalpus testaceus, and a single example of Phlæotyra tipes. The mountain ash gave us Rhynchites cupreus. Wading through e fern was no joke, and we hailed with joy the spire of Edwinstowe Church seping through the trees. After lunch, we re-opened our campaign, but, with e exception of a single specimen of Conopalpus Vigorsii, and a pair of Drepana lcataria and of Hepialus velleda, nothing of much importance fell to our lot. here was a perfect plague of flies; the only remedy was a vigorous fumigation, ad I should advise all entomologists who come this way to remember their pipes. s evening drew on, we obtained a good many fair specimens of Cybosia mesomella ying in the open places; and at sugar, among hosts of common things, we got hyatira batis and derasa, Neuria saponariæ, and two Hadena contigua. One tree terally swarmed with the male Lampyris noctiluca; as fast as we could bottle em they came flying: we saw but one female, and she was accompanied by four five males. We intend to try the bark in a few weeks, and will report progress. -RICHARD AND WILLIAM TYRER, Grove House, Mansfield, June 25th, 1868.

# Rebiew.

he Butterflies of North America; with coloured drawings and descriptions. By M. H. Edwards. Philadelphia: the American Entomological Society. London: rübner & Co., Paternoster Row. Under this title Mr. Edwards, well known for his devotion to the study of the North American Diurnal Lepidoptera, of which he has the largest collection in existence, proposes to issue a series of coloured illustrations of all the species at present known, accompanied by descriptions and notes on geographical distribution a work much wanted, since the number of described North American species has been doubled during the last few years; the descriptions are scattered through various publications. The first part, which was issued in April of the present year, gives promise of great excellence, both as to the execution of the figures and the information contained in the text.

In size and general appearance, the work resembles Hewitson's "Exotic Butterflies;" but each part is to consist of five plates instead of three. The parts are to be issued quarterly, and the genera to follow in irregular order, not following any system of classification; but a classified synopsis of all the species is promised as portion of the text, to be commenced with Part 3.

With regard to the figures, it is not too much to say that they will bear comparison with the best that have ever been given in iconographical works. They are correct in outline and drawing, and coloured with great truthfulness and sobriety; the general effect, too, is most pleasing and artistic; in short, if illustrated works of so much beauty and accuracy as this can be produced on the other side of the Atlantic, it behoves Natural History Iconographers in our old Europe to look to their laurels.

The letter-press accompaniment to the plates is also remarkably well done. The synonymy is carefully and, so far as the work has proceeded, accurately worked out; the closely-allied species luminously discriminated; the descriptions good and the details of occurrence and distribution of the species full of interest. The text, in fact, forms pleasant reading. Under the head of one species, Argynnis Diana, the affinities of a fossil allied butterfly, found in the miocene beds of Croatia in Europe, the so-called Vanessa Pluto of Heer, are discussed; the author giving his reasons for believing this to be an Argynnis allied to the somewhat anomalous North American A. Diana; and hence deduces another fact in support of the hypothesis, that, in tertiary times, the organic productions of Europe and North America much more closely resembled each other than they do at present.

The first part is devoted to the genus Argynnis; and most of the species have never before been figured. The second part is to consist, also, of Argynnis, with the addition of a new Apatura, and a number of new Colias. The third part will contain a continuation of Argynnis, and a number of previously unfigured Thecke, &c.

No student of this beautiful and favourite tribe of insects will fail to obtain this interesting work; and we hail its appearance as a true advance in the science of Entomology.

Entomological Society of London, 8th July, 1868. H. W. Bates, Esq., F.Z.S., President, in the Chair.

Mr. Bond exhibited an extraordinary variety of Setina irrorella, from near Croydon; it was very pale, with but few dots, but with a strong dark sub-terminal fascia: also a variety of Arctia villica, bred from a larva found at Wormwood

orubs, the ground colour being pale fulvous or cream-coloured, with scarcely a cace of dark markings: also two males and one female of Drilus flavescens from reshwater, the three having been found simultaneously in copulâ; he mentioned ther analogous instances, notably that in which Dr. Knaggs had found a male ach of Tortrix heparana and T. viridana coupled with one female of the latter pecies.

Mr. McLachlan exhibited 12 bred specimens of Hypercallia Christiernana from uvæ found at Shoreham, in Kent; he had bred 19 in all.

Mr. Davis (present as a visitor) exhibited a fine collection of preserved larvæ f Lepidoptera.

Mr. Wood (visitor) exhibited bred specimens of various species of Saturnidæ, netuding Cynthia, Promethea, Cecropia, and Polyphemus. The species, he remarked, Il possessed a more or less strongly developed moveable spine attached near the ase of the inner side of the fore-tibiæ, and lying in a groove in the tibia itself. The issects used this appendage as a comb, drawing their antennæ between the spine and tibia, and thus cleansing them from dust, &c.

Mr. Jenner Weir exhibited a large exotic beetle of the genus Monochances which flew into the London Custom House very recently; it had no doubt bred in mported timber.

Mr. Blackmore exhibited a collection of insects, of all orders, formed by him t Tangiers, in Morocco.

Mr. Eaton exhibited microscopic preparations of the anatomy of several general fephemerides.

Professor Westwood exhibited two extraordinary forms of Chalcidida, from Australia and the Amazons respectively; they were remarkable for very large size, and for aberrant development of the abdomen.

Mr. Smith sent for exhibition specimens of Ophion macrurus bred from American accoons of S. Cynthia; the species was more properly parasitic upon the American S. Cecropia, but had adapted Cynthia to its purpose on the introduction of that insect into America. One of these Ophions had stung Mr. Smith with such severity, as to lead to the belief that poison was introduced into the wound.

The Secretary exhibited a wooden letter-clip, sent to him by an anonymous correspondent, in the notch of which an Odynerus had formed her nest.

Reports on the ravages of the "coffee-borer," by Dr. Bidie, Government Commissioner, were read by the Secretary.

Sir John Lubbock communicated a paper on the larva of Micropeplus staphylinoides, with drawings; the form of the larva of this anomalous genus of beetles tended to prove that it was wrongly placed in Staphylinide, and belonged more properly to the Nitidulide.

Mr. Eaton read a paper on the anatomy of the imperfect condition of Curnis macrura.

Mr. F. Bates sent a continuation of his paper on Australian Heteromera.

Mr. Kirby sent a tabular comparison of some representative species of Diurnal Lepidoptera in Europe, Asia, and North America.

This was the last meeting before the recess; the next will be on the 2ml November.

#### AN OUTLINE OF A RE-ARRANGEMENT OF THE GENERA OF EPHEMERIDÆ.

BY A. E. EATON, B.A.

The principal object of the present communication is the settlement of the generical nomenclature of the *Ephemeridæ*. Their geographical range is only subordinate to the design; for so circumscribed are the sources whence information on this subject is obtainable, that it would not be worth one's while to treat of this alone. Doubtless the unsightly appearance of the dried insects has something to do with the carelessness with which they are regarded by most collectors, and with the scantiness of our knowledge of their distribution. My notes are limited to the recent genera; and, unless the contrary is specified, the neuration of the anterior wings alone is taken into consideration. The terminology of the neuration is that of Sundevall, as elucidated in his paper, "Om Insekternas Extremiteter," in the Stockholm Transactions for 1862.

#### Genus Cænis, Steph.

Syn. Brachycercus, Curt.; Oxycypha, Burm, &c. Type C. macrura, Steph.

Distrib.—England, Austria, Sweden, Switzerland; N. China, Ceylon; Indiana, Florida.

Genus Tricorythus,\* nov. gen.

Syn. Canis, p., Pict.

Type T. varicauda, Koll. Mss.; Pict.

Distrib.—Egypt.

The type of this genus differs from Canis in the neuration of the wings. The anterior rib of the vas ulnare is bipartite. Its posterior division is simple; but the anterior vein gives off an alternately pinnate, three-branched veinlet backwards and outwards, near its middle, and forks at the commencement of its apical fourth. These nervures are connected together by numerous cross-veinlets. The second ulnar rib is either bipartite (Savigny, fig. 6), or completely divided (Id. fig. 7), and each of the resulting veins sends two simple veinlets backwards to the outer margin. The anterior vas internum is simple; the posterior emits two or three simple veinlets backwards (see Savigny, in "Description de l'Egypte," ii., Névroptères, tab. 2, figs. 6 and 7). No posterior wings.

<sup>\*</sup> Tricorythus (Gr.)-tri-Koruthos = triple-plumed.

#### Genus Oligoneuria, Pict.

Type, O. anomala, Koll. Mss.; Pict.

The typical species has two simple ulnar ribs, and two simple\* vasa nterna.

Distrib.—Brazil, 1 sp.

## Section B, O. Rhenana, Imhoff.

The robust anterior and the slender second ulnar ribs are bipartite. The divisions (veins) of the second rib closely accompany the first and the third ribs respectively. From this last a slender vein is sent to the internal margin. Between these ribs and veins a very coarse reticulation is obscurely indicated. The anterior vas internum accompanies the third ulnar rib and its vein: the posterior is very short, and has two strong veins and a feeble one. The ulnar ribs are connected together by a few cross-veinlets. The 3 has four-jointed forceps, whose proximal joint is upwards of twice the length of the remaining three together.

Distrib. - Central Europe, 2 sp.

## Section C, O. Trimeniana, McLachlan.

The first and the third ulnar rib is bifid; the second is obsolescent and bipartite, as in O. Rhenana. The anterior division of the second is bemits a veinlet nearly parallel with the posterior division of the first rib, which vanishes before it attains the outer margin, and is met obliquely by the cross-veinlets of an obscure coarse reticulation that occupies the space between the two most prominent ribs. There are two simple vasa interna.

Distrib.—Natal, 1 sp. (♀ only known).

Genus Campsurus, † nov. gen.

Syn. Palingenia, Burm., Pict., part.

Type C. latipennis, Walker.

Distrib.—The Amazons, 6 sp.

The first ulnar rib is bipartite; its bifurcate anterior division includes a simple supplementary vein; its posterior division separates into an anterior simple, and a bipartite veinlet. The second ulnar rib is bipartite, and is produced over the third rib to anastomose with the common

<sup>\*</sup> I am inclined to regard the first of these an ulnar; but have followed above M. Pictet's explanaion of the neuration, not having seen the type.

<sup>†</sup> Campsurus (Gr.)-Kampse-oura = bent-tailed.

basis of the vasa interna. In its first fifth the third ulnar rib runs close to the first vas internum; it is then curved outwards, and sometimes receives a simple supplementary vein from before. Shortly after this, it either becomes trifid or is resolved into an anterior simple, and a posterior bipartite vein. The posterior of the moderately straight vasa interna sends a recurrent vein towards the base of the wing. From the costa to the vas ulnare inclusive the reticulation is well defined. Forceps of 3 slender and jointless (apparently). Legs feeble and short. The two caudal setse are horizontally patent in the dried 3.

Section B, C. curtus, Hagen, — Palingenia curta, Hag. List of S. Americ. Neuropt.; Smithsonian Miscel. Coll. 1861, p. 304. — Pal. albifilum, var., Walk. Brit. Mus. Cat.

Distrib.—The Amazons, 1 sp.

In this species the cross-veinlets are numerous throughout the extent of the anterior wings; and the forceps of the 3 are moderately stout and two- or three-jointed.

Genus Polymitarcys,\* nov. gen.

Syn. *Palingenia*, Burm., part. Type *P. virgo*, Ol.

Distrib.—Europe and Egypt, 2 or 3 sp.

The anterior ulnar rib is bifid, and is met in front, near its base, by a bipartite supplementary vein whose fork includes several veinlets. The fork of the rib includes one supplementary vein. Second ulnar rib simple. The posterior division of the bipartite third rib is itself bipartite, and is followed by upwards of four supplementary veins. These are succeeded in their turn by some irregular veinlets from the internal margin. The recurrent vein from the robust second vas internal margines two or three simple veinlets from the inner margin. Vasa internal moderately straight, and simple. Reticulation rather fine. Forceps of 3 four-jointed; their second joints the longest.

Genus Palingenia, restricted, Westwood.

Syn. Palingenia, Burm., part.

Type P. longicauda, Ol.

Distrib.—Europe, 1 sp.; Asia Minor, 1 sp.?; Silhet and Borneo 1 sp. (three species in all); and, perhaps, one or two S. American species.

ullet Polymitarcys (Gr.)—polymitos-arkus = a net consisting of many threads.

The neuration of the anterior wings is somewhat like that of the preceding genus; the vasa interna, however, are connected together by larger number of cross-veinlets. Forceps of 3 three-jointed; their rasal joints much the longest. Q with the central seta rudimental, not well developed, as in *Polymitarcys*.

## Genus Pentagenia, Walsh.

Syn. Palingenia, Subgen. A. Walsh, 1862.Type P. vittigera, Walsh.

The first ulnar rib is bipartite; its bipartite anterior, and its bifid costerior, veins, both include a simple supplementary vein in their forks, and the one in addition includes two or three supplementary veinlets. The simple posterior ulnar rib is met not far from its origin by a simple upplementary vein, which is suddenly curved forwards towards the coint of contact (as in *Ephemera*). The very convex outermost veinlet from the recurrent vein of the third vas internum, which is succeeded by one very irregular, feeble veinlets, is distinctive of this genus. Forceps of four-jointed, their second joints the longest.

# Genus HEXAGENIA, Walsh.

Syn. Palingenia, p., Pictet; Idem subgenus B., Walsh, 1862. Type H. limbata, Guer.

Distrib.—Arctic America, Canada, United States, and the Amazons.

The most obvious differences between the neuration of the anterior rings of Hexagenia and Ephemera are the excess in number of the nore or less crowded, parallel, straight, veinlets extending from the hird vas internum perpendicularly to the internal margin, over those thich unite it and the second supplementary rib. The recurrent ein of the third vas internum gives off several nearly straight arallel veins. The 3 has the second joints of the four-jointed forceps he longest, and both sexes reject the central seta.

## Genus Ephemera, De Geer.

Syn. Ephemera, Lin., part.

Type E. vulgata, Lin.

Distrib.—Europe; N. China, Hindostan, Ceylon (aberrant); anada, Illinois.

The forceps of *Ephemera* are similar to those of *Hexagenia*, but the central seta is sub-equal to the others. The cross-veinlets between

the second supplementary rib and the third vas internum are more numerous, and the veinlets from the third vas fewer in number, than the last genus; and, lastly, these veinlets are usually opposite to one another.

Genus Potamanthus, Pictet, restricted.

Syn. Potamanthus, Pict., part.

Type P. lutea, Lin., Pict.

Distrib.-England, Italy, Germany, 2 sp.

The second vas internum near the base of the wing anastomoses with the third, instead of with the first, as in *Ephemera*. The third, after receiving the second, gives off a simple vein on each side. Posterior to the third vas internum there is, at the fewest, one bifid veinlet [? from the recurrent vein of the third vas]. This genus is further distinguishable from *Ephemera* by the ascalaphoid eyes of the male, and by his three-jointed forceps, whose proximal joints are much longer than the other two together.

Genus LEPTOPHLEBIA, Westwood.

Syn. Potamanthus, Pict., part. Baëtis, Burm., Pict., part.

Type L. vespertina, Lin.

Distrib. — Lapland, Italy, England, Austria; Canada, United States, Newfoundland. New Zealand, Australia, Ceylon, Cape of Good Hope.

The vas ulnare consists of a simple posterior, and a bipartite anterior rib. Of the divisions of this last the foremost is bipartite at the commencement of its second fourth, and includes in its fork two or three supplementary veins and veinlets; whilst the other is bifurcate, and includes one such vein. A supplementary rib, very like the posterior ulnar rib, intervenes between the vasa interna and the vas ulnare. It is preceded and followed by two shorter veins. These last are united, either with the supplementary rib or with the first, very convex, vas internum. The former arrangement prevails in species inhabiting the southern hemisphere (which also usually have the marginal and sub-marginal areas coloured), the latter in the larger of the American and European species. Forceps three- or four-jointed, the basal joint the longest. Eyes of the 3 double.\* The central seta is rather the longest.

Section B, L. fusca, Curt.

Distrib.—England, Switzerland, Austria (Carniola), 2 sp.

The posterior wing has the costa curiously excised in its apical alf; and the basal joint of the forceps, instead of being upwards of hrice as long as the other two together, equals them in length only. So ong as the subaqueous stages of development remain unknown, it seems dvisable to retain the species in the genus Leptophlebia.

## Genus EPHEMERELLA, Walsh.

Syn. Potamanthus, Pict., part. Baëtis, Walker, part.

Type E. excrucians, Walsh = invaria, Walker.

Distrib.—Hudson's Bay, Illinois, 2 sp.; England, Spain, Switzerand, Germany, 3 sp.

The neuration differs from that of Leptophlebia principally in the ollowing particulars. The foremost vas internum, instead of curving prwards when it nears the base of the wing, and thus receding from the second vas internum, runs straight up to the thickened root of the ing alongside the second: it gives off a bipartite vein, and is itself ifurcate. The second vas internum is simple, the third bipartite, and mitted with the second by a cross-veinlet. The has 3-jointed forceps whose second joints are the longest), and ascalaphoid eyes (Mr. Walsh ays those of invaria are simple). In its later subaqueous stages of evelopment the immature insect has six pairs of complex branchial opendages, which are made up of a trapezoidal plate furnished undergath with a bipartite process, which supports several imbricated mellae arranged lengthwise.

## Genus Clöeon, Leach.

Syn. Cloë, Burm., Pict., part. Chloëon, Lubbock. Cloëopsis, Etn., olim.

Type C. dipterum, Lin.

Distrib.—Lapland, Egypt, Madeira, France, Austria; N. China; or perhaps 3 sp. A species (1 specimen in Brit. Mus.) is reputed be from S. Australia.

Dipterous. During their later aquatic stages of development the sects have six double pairs and a seventh single pair of branchial ates. A series of short, solitary, supplementary veinlets is situated

on the outer margin of the wings. The  $\mathcal{E}$  has the third joints of its 4-jointed forceps the longest, and the upper divisions of its double eyes turbinate. Egg-valve of  $\mathfrak{P}$  bipartite.

Genus Baëtis,\* Leach.

Syn. Baëtis, B, Steph., Curtis. Cloë, B, Burm. Brachyphlebia, Westw. Cloëon, Hagen, p., Etn.

Type B. bioculatus, Lin.

Distrib.—Europe; Madeira, Egypt; Hindostan; Hudson's Bay.

Section A, B. luteolus, Müller, = C. translucida, Pict.

Forceps as in Cloëon, egg-valve entire. Posterior wings acute, with two simple veins. Branchial plates of the aquatic insect single. A series of short, solitary, supplementary veinlets proceeds from the outer margin of the anterior wing.

Distrib.—England, Denmark, Switzerland, 1 sp.; Germany, 1 sp.

Section B, B. bioculatus, Lin.

Syn. Brachyphlebia, Westw.

Species conforming to this, the typical section of the genus, differ from the former group in the following particulars only. Anterior wings with the short supplementary veinlets on the outer margin in pairs. Posterior wings obtuse, with two or three longitudinal veins (the second of which is either simple, bifid, or bipartite, according to the species), and with more or fewer short supplementary veinlets at the apex. The fourth joint of the forceps seems never to be pyriform as it is in Cločon, and in the preceding section of Bačtis.

Section (?) C. B. tristis, Hagen, = Cloë tristis, Hagen.

Distrib.—Ceylon.

I have only seen a ? sub-imago of this species, which may typify a separate genus.

Mr. Walsh and Dr. Hagen have described several N. American species of *Cloë*, but I have not seen any representatives of the sections in which they have arranged them.

<sup>\*</sup> Probably a misreading of Bætis, the Latin name of a Spanish river (the Guadalquivir), which to used in some aduses.

Genus BÆTISCA, Walsh.

Syn. Baëtis, part., Say.

Type B. obesa, Say. Distrib.—United States.

The anterior ulnar rib is seemingly tri-partite. (The anterior dision is probably a supplementary vein, which, with its foremost partition, is bipartite, and includes a simple supplementary vein; its second ivision is simple. The second partition of the first ulnar rib is bifurcate, and includes a simple supplementary vein: its third partition is simple. The simple posterior ulnar rib is succeeded by two supplementary ribs, he hinder of which sends several simple veinlets, parallel one with mother, to the internal margin. There are two straight, simple, vasa atterna. The forceps of the 3 seem to be 3-jointed, and to have the econd joint the longest, as in Ephemerella (but that which appears to be the proximal joining may be a fold in the integument only, in which ase the first joint would be by far the longest, and would present an bruse spine on its under-surface, like the first joint of the forceps of ome species of Leptophlebia). A jointless remnant of the central seta

Genus Coloburus,\* nov. gen.

Syn. Palingenia, Burm., part., Walker. Type C. humeralis, Walker.

Distrib.-New Zealand.

retained.

The vas ulnare resembles somewhat that of the preceding genus in its manner of branching. It is followed by two supplementary ribs, and two supplementary veins. The first of these ribs sends down three or four bent, simple (or slightly bifurcate), veins to the internal nargin; the second of them resembles a vas internum. There are about four, slightly curved, vasa interna, some simple, others bifurcate, or even bifid. The outer setæ are upwards of fifteen times longer than the central one. The 3 has 4-jointed forceps, their second joints are the longest; eyes double.

Genus Siphlonurus, † nov. gen.

Syn. Baëtis, Ed. Pict., part. Ephemera, Zett., part.

Type S. flavidus, Ed. Pict.

Distrib.—Sweden, England, Ireland, Spain, 1 sp.; Prussia, 2 sp.; United States.

<sup>\*</sup> Kolobouros (Gr.) = stump-tailed. +

<sup>+</sup> Siphle oura (Gr.) = defective in the tall.

90 [September,

The neuration of the fore-wings, and the proportions of the forcipal joints, are very similar to those of the last genus. But the eyes of the 3 are simple, and the central seta is rejected. The sides of the dorsal arcus of the last well-formed segment of the abdomen are prolonged posteriorly so as to form an acute, more or less flattened, spine on each side in all of the genera from Bætisca to the present genus inclusive.

Genus HEPTAGENIA, Walsh.

Syn. Baëtis, auct. part.

Ecdyurus (misspelt Ecdyonurus) Etn.

Distrib .- N. Hemisphere; and, according to M. Blanchard, Chili.

The principal difference between this genus and the preceding, in the neuration of the wings, is that the first of the supplementary ribs between the vas ulnare and vasa interna terminates at some distance in advance of the angle of the wing, and supplies with veinlets no part of the internal margin; that portion of the inner margin which is included by the two supplementary ribs receiving upwards of four supplementary veins and their veinlets. The first joint of the 3-jointed forceps is the longest. Egg-valve entire. Central seta rejected. Eyes entire in the male.

Type H. flavescens, Walsh.

Distrib.-England, 4 sp.; Germany, &c., N. America.

Lobes of the penis divergent. Wings of the sub-imago with the cross-veinlets not margined with a darker colour than that of the rest of the wing, and of the same colour as the wing until shortly before the last moult.

Section B, H. venosa, Fab. Syn. Ecdyurus, Etn.

Distrib.- England, 3 sp.; Europe, &c.

Lobes of the penis slightly separated, horizontally flattened and triangular. Cross-veinlets in the wings of the sub-imago conspicuously margined with a darker colour, in most species. At the time when I proposed the name *Ecdyurus* for this genus, I imagined that Mr. Walsh's *Heptagenia* was a dismemberment of *Palingenia*, Burm.; but he having kindly forwarded to me, for the British Museum, types of his new genera, I find that *Heptagenia* is the same as *Baētis*, Burm., Pict.

Having now surveyed the genera, I will attempt to point out the affinities presented by them one to another. The family seems to con-

st, as it were, of two or three distinguishable groups welded together. erhaps their relations may be indicated by means of punctuation:

Cænis, Tricorythus, Oligoneuria, (Campsurus); Campsurus, Polymiurcys, Palingenia, Pentagenia, Hexagenia, Ephemera; Potamanthus, eptophlebia, Ephemerella, Cloëon, Baëtis; (Leptophlebia), Bætisca, Colourus, Siphlonurus, Heptagenia.

## Equivalents.

1st: Wing nervures.

Costa, Sundevall = margo alæ antica = la costale, Pictet.

Vas sub-costale, Sundevall = sub-costa = la sous-costale, Pictet.

Vas radiale, Sundevall = radius; la médiane, Pictet.

Vas ulnare, Sundevall — ramus thyrifer, Kolenati — la sous-médiane, ictet.

Vasa interna, Sundevall = cubitus, Kolenati = l'anale, et accessories e l'anale, Pictet = veins on the post costa, Walsh.

[Vas post costale, Sundevall = the anterior margin of the wing etween the pterostigma and the cubital point, Haliday, in *Libellulida*.]

Supplementary veins are such as proceed from the *outer margin*, ut do not reach the *root* of the wing, nor are derived from the principal eins of the wing.

Supplementary ribs reach the base of the wing.

2nd: Margins of Wings.

Margo antica = costa.

Margo externa = apical margin, M'Lach.

Margo interna = post costa, Walsh.

3rd: Divisions of a Vein.

Primary veins are called ribs,

Their branches, veins,

Their subordinate ramifications, veinlets.

4th: Modes of Division of Veins.

Divided, separating at the very commencement (e.g. twice divided.)

Partite, or parted, dividing almost at its origin (e. g. bi-partite, ividing into two).

-Fid, dividing nearly in the middle of its length (e.g. tri-fid).

Furcate, or forked, dividing near its extremity (e. g. bifurcate, nding in two simple prongs).

Reading: June 6th, 1868.

NEW SPECIES, &c., OF HETEROCEROUS LEPIDOPTERA FROM CANTER-BURY, NEW ZEALAND, COLLECTED BY MR. R. W. FEREDAY.

BY ACHILLE GUENÉE.

(Concluded from page 65).

#### Genus Camptogramma.

#### CAMPTOGRAMMA FUSCINATA, Guenée, n. s.

Statura habitusque C. strangulatæ. Alæanticæ lilacino-brunneæ; margine, lineaque media angulata intus diluta, brunneis; puncto cellulari: posticæ dilutiores, immaculatæ: subtus paleaceæ, atomis lineolisque duabus brunneis. Antennæ maris vix pubescentes.

Size and aspect of *C. strangulata*, for a dark variety of which, at first sight, it might be mistaken. Superior wings marked in a precisely similar manner, but with the ground colour pale lilac-brown, which, from the median line to the base, becomes wood-brown. Inferior wings much paler, without lines; but beneath they are ochreous-yellow, strongly sprinkled with ferruginous atoms, which, accumulating between the cellule and the margin, form two short parallel lines. Antennae and palpi as in *C. strangulata*, of which it is perhaps strictly only a modification.

#### CAMPTOGRAMMA STINARIA, Guenée, n. s.

Media. Alæ omnes integræ, luteæ: anticæ lineis duabus albis nigrolimbatis: posticæ supra immaculatæ: subtus rufæ, lineis sex ferrugineis. Antennæ pectinatæ.

Size and habit of *C. insulata*. Superior wings ochreous-yellow, suffused with blackish; the only markings are two distant lines, the first forming a single angle in the cellule, the second simply wavy, these lines are slender, white, narrowly bordered with black on the costa, where they approach nearer one to the other, and followed by a brownish tinge; extremity of the fringes finely marked with white; inferior wings ochreous-yellow, without markings above, but beneath they are powdered with red, and traversed by six parallel lines, of which the four first are placed close together and discoidal, the two others isolated and toothed. Body concolorous, without markings. Antennæ of the male furnished with long pubescent and spatulated pectinations.

# Genus Dasyuris, Guenée, nov. gen.

Antennæ of the 3 simple, granulated, scarcely pubescent. Palpi moderately long, connivent in form of a beak, hairy, the joints distinct. Haustellum robust. Body thick, velvety. Thorax robust, broad, hairy; abdomen scaly, banded, laterally velvety, truncated at the apex. Legs long, scaly, spurs robust; tarsi spiny. Wings stout, entire, with long fringes, the markings similar on both pairs, colours bright, even on the under-side.

93

I establish this genus on a pretty species from New Zealand, to thich may be added my Coremia euclidiata, glyphicata, and heliacaria. all have a peculiar facies, which approaches that of some Fidonidæ, and even some Noctuæ.

## DASTURIS PARTHENIATA, Guenée, n. s.

Alæ fulvæ, fimbriis albis, nigro interruptis: anticæ lineis fasciisque igricantibus: posticæ margine lineisque, ultima interrupta; subtus flavolbidæ, nervis pallidis, fasciis interruptis nigricantibus.

28 millimetres in expanse. Wings stout, fulvous, orange, the fringes interrupted with black and whitish. Superior wings traversed by thick angulated blackish lines, which accumulate on the median space, which they in part invade, leaving a distinct eliular dot; afterwards there is a band of the ground colour, and lastly a broad lackish border divided by the subterminal line, which is fulvous and formed of nequal spots: inferior wings more lively in colour, with a toothed border; on the pper-side there is a narrow unequal band of atoms, interrupted in the middle, fiterwards two lines, and the base powdered with blackish; beneath these wings are pale yellow, traversed by whitish rays, with the bands interrupted and blackish, a which the nervures are distinctly paler; the superior wings show these nervures and yon the terminal space, the rest being occupied by three bands corresponding to those of the upper-side, and there is a black cellular dot. Body black, clothed with greenish-yellow hairs; the abdomen bordered laterally with white hairs, and arrowly zoned with the same colour. Antennæ of the male granulated and carcely pubescent.

#### Genus CIDARIA.

# CIDARIA PYRAMARIA, Guenée, n. s.

Media. Alæ anticæ lignicolores, fasciolis quinque undatis strigaque bliqua apicali albidis: posticæ pallide ochraceæ, immaculatæ, lineolis tertinalibus nigris: subtus albidæ, maculis basalibus discalibusque seriatim ispositis fuscis. Antennæ pectinatæ.

Perhaps the prettiest species of the genus. Superior wings divided by wavy and toothed bands, alternately white and wood-brown, these last pale and dark; in the third white band is a black cellular dot touching the brown band; the fourth, thich in reality borders the median space, is more sinuous than the others; the set, or sub-terminal, is toothed in a nearly regular manner, and is traversed, becath the apex, by an oblique white streak; fringe interrupted with whitish and lackish, and preceded by black marks: inferior wings pale uniform silky yellow, he fringe, which is interrupted, separated by well-defined little black marks; the inder-side of these wings is dirty white, from the base proceed two brownish waves, of which the second is deeply divided as far as the cellular dot, afterwards is a cries of smaller waves, also brown, shaded with white exteriorily. Abdomen narked with indistinct geninated black dots. Antennæ furnished with long and cry slender pectinations.

#### CIDARIA BULBULATA, Guenée, n. s.

Statura vix C. interruptæ. Alæ anticæ lignicolores, variegatæ, line quatuor albis sinuatis, tertia gemina angulata; punctis numerosis term. nalibus nigris: posticæ luteæ, immaculatæ: subtus omnes luteæ, absque lineis, posticæ puncto cellulari serieque media punctulorum nigris.

I have seen only the female, which is one of the smallest of the genus; but the male is no doubt larger.

Superior wings wood-brown, varied with pale and dark; the fringe concolorous, preceded by small geminated black dots; there are four white lines, the two first parallel and somewhat angulated, the third forming a band, divided by an interrupted white thread and followed by another very slender brownish line, the fourth simple, continuous and slightly shaky, no sub-apical line: inferior wings dark ochrecusyellow without any line, and simply with black terminal markings: under-side of all the wings ochrecus-yellow without markings, excepting that on the inferior there is a little cellular dot, and a series of very small and distant black dots. Abdomen grey with several black atoms.

#### CIDARIA DELICATULATA, Guenée, n. s.

Statura C. silaceatæ: alæ anticæ fuscæ, lineolis multis parallelis albidis, spatio medio lato furcula albida nervulari diviso, macula apicali pallida: posticæ ochraceæ immaculatæ; subtus rufescentes, punctulo cellulari lineolaque media dentata fuscis. Abdomen immaculatum.

I have only the female of this pretty species, conspicuous for its delicate markings. It is almost of the size of the European C. silaceata, but has the cut of the Australian species.

Superior wings slightly falcate at the apex, pale brown varied with black markings; the two principal nervures are tinged with whitish, and the median forms a little fork in the median space, which is very broad, and enclosing several black markings (of which the lower ones tend to form rings), and also the cellular marking, which is bordered all round with whitish; on each side of the median space is a fascia formed of very slender, undulating, parallel, and closely placed, whitish lines, at the base are two other lines, almost straight and distant, and on the terminal space is a fine line, which is continuous, and descends from a broad triangular apical spot; little geminated black dots, encircled with pale grey, precede the fringe, but without touching it: posterior wings dirty ochreous, the fringe silky, and preceded by scarcely evident little grey triangular spots; the under-side of these wings is tinged with rosy, with traces of parallel lines, of which one, median, is formed of little slender blackish arcs. Body concolorous, without dots or lines.

## Genus Helastia, Guenée, nov. gen.

Antennæ of the 3 rather short, furnished with long, robust, but very distant, pubescent pectinations. Palpi very scaly, hairy, connivent in form of a beak, acute. Abdomen and legs as in Scotosia. Wings

868.1 95

proad, entire: the superior pair acute at the apex, the lines slightly ketched: inferior pair with scarcely distinct lines, the nervures not ounctated: neuration of Scotosia.

I establish this new genus on a small New Zealand species, which s not larger than an Eupithecia, but which has the aspect of a Scotosia, although the pectinated antennæ and entire wings distinguish it at first ight.

HELASTIA EUPITHECIARIA, Guenée, n. s.

Statura Eupitheciæ impuratæ. Alæ cano-griseæ, fimbria concolori: nticæ fasciis tribus incompletis denticulatis punctoque cellulari nigris: osticæ concolores lineolis vix distinctis: subtus anticæ nigricantes, posticæ lbidæ lineis duabus denticulatis punctoque nigris.

Size of Eupithecia impurata. Superior wings greyish-white, with an olivaceous inge; three parallel sinuated and toothed blackish bands, rather well marked as ar as the middle of the wing, but becoming afterwards indistinct; the third is the est marked and the most sinuated; the sub-terminal is only indicated by slight roups of atoms; the cellular dot very small; fringe concolorous, preceded by inistinct geminated dots: inferior wings paler and more whitish, above with only races of greyish lines, but beneath there are two sinuated and toothed median nes, and a cellular dot, rather well marked, on a pale, sometimes white, ground olour, while this side of the superior wings is suffused with blackish-grey. Body oncolorous; abdomen with ill-defined, blackish, geminated dots.

I have already described the antennæ of the ♂; the only ♀ I possess has lost hem; it resembles the  $\delta$ .

Châteaudun, 1868.

NOTES ON THE GENUS ACIDALIA, WITH DESCRIPTION OF THE LARVA OF A. HOLOSERICATA,\* &c.

BY REV. J. HELLINS, M.A.

To Mr. A. E. Hudd, of Clifton, I am indebted for the opportunity f watching the earlier stages of another Acidalia, viz., holosericata; nd his kindness is the more thankworthy, in that he supplied me with ggs three years in succession, until I could succeed in breeding the noths. Whilst engaged with this species, I took in hand some others, isetata, scutulata, and interjectaria (as we must now call what used to bass in this locality for osseata), and made notes of their various stages; lso imitaria and immutata, but having described these before, I now go o further with them than the egg.

<sup>•</sup> It does not please one's sense of the fitness of things to see the two forms of the same word, loborericate and Subsericeata, standing so close to one another in our lists, but I have not thought layer! at liberty to insert the s in the former after receiving the following information from Mr. subbledsy:—'I suppose Holosericata was the name given to this species by Duponchel, but I think It was probably written so in mistake for Holosericeata; the synonymes stand thus in Dr. Staudinger's Catalogue: 'No. 78, Holosericata Dup. Iv., p. 109, pl. 59, 7.

Gn. 1, 408, Holosericata H. S. 80-31.

This is all the information I can give you on the subject,"-J. H.

96 [September,

I confess I am not satisfied with what I have done about the eggs. More careful labour with the microscope than is in my power to bestow is needed to make good work here: I should like the micrometer to be brought into use for the more accurate comparison of dimensions, and a good equipment of condensers and reflectors will be required to make quite sure of the colouring and markings of the surface; and, after all, I fancy it will be found that while certain genera—Ennomos and Acidalia for example—furnish interesting studies in this stage, there are others in which the allied species cannot be safely distinguished in the egg.

The eggs of holosericata reached me July 17th, 1867; larvæ hatched on the 25th. They fed on the rock rose, Helianthemum vulgare, and their habit was to congregate three or four together near the bottom of a shoot, strip it for some distance of its bark or skin, and then feed on the withered leaves at the tip of the shoot as it hung down: but of course I cannot say whether in nature they are to be found singly or in company. They ceased feeding during the winter, and were at all times very sluggish and quiet in their habits. They moulted for the last time about the end of March, spun up during May, and the moths appeared June 20th to 29th, 1868.

Interjectaria.—Eggs obtained here July 12th, 1867; others sent me by Mr. Brown, of Cambridge, July 17th: larvæ hatched on 24th and 26th: fed on dandelion and scarlet pimpernel, prefering withered leaves, and indeed would eat almost anything withered: spun up in May, 1868, and moths appeared June 24th to 29th.

Scutulata.—Eggs laid July 12th, 1867; larvæ hatched on 17th, ate withered dandelion, and in the spring seemed very fond of a mouldy slice of turnip, which had been put into their flower-pot to catch an intruding slug: spun up during May and June; moths out June 8th to July 2nd.

Bisetata.—Eggs sent me by Mr. Doubleday July 26th, 1867; larvæ hatched on 30th; fed on Polygonum aviculare, and withered bramble leaves; spun up in May; moths out June 20th to 25th.

The egg of holosericata is almost barrel-shaped, and perhaps more evenly flattened at the ends than any other of the Acidaliæ; it is covered with a coarser reticulation than interjectaria, and in colour is decidedly yellow.

Interjectaria—the egg is flattened at either end, but not so decidedly, the reticulation finer, the colour pinkish.

Scutulata—rather longer in shape, one end flattened, the other more conical, covered with minute pits or depressions; colour whitish, mottled with brownish-pink.

1868.]

Bisetata—obtusely oval in outline, not quite cylindrical, but rather depressed; irregularly covered with fine shallow reticulation; colour salmon-pink, with large spots of deeper tint.

Immutata—a long cylindrical shape, flat at one end, more conical at the other, strongly ribbed, with transverse reticulation; colour pale buff, speckled with strawberry-pink.

Imitaria—somewhat pear-shaped, but flattened at the smaller end; strongly ribbed, and irregularly reticulated between; colour glistening white, with small blotches of delicate pink.

The larva of holosericata belongs to the shorter type of Acidalia, and is perhaps the plainest in dress of all this very plain family. When full-grown, the length is a little over half-an-inch, in figure tapering considerably towards the head, which is small and notched, tucked under when at rest, thrown forward when in motion; skin most wonderfully wrinkled and warted, the warts being on the wrinkles, and so arranged that they form on the back a double ridge on each segment, which contracts to a single median ridge at each fold, and another more prominent ridge at the spiracles; the segmental divisions very decidedly eleft; bristles short and clubbed: the larva feels very stiff and firm; when disturbed it curls in the front segments in the same plane with the rest of the body, and not on one side, as the longer Acidalia do. In colour it varies little throughout its growth, being generally a very muddy reddish-brown, but just after moulting almost black, the markings few and indistinct: the hinder segments are somewhat paler than the rest of the body, the segmental folds are darker: there is a paler dorsal line edged with black threads, which show most distinctly on the hind segments; and the dorsal ridges are paler than the ground.

When full-fed the larvæ retired into some sandy soil to undergo their pupation.

Interjectaria.—This is also one of the short, stiff larvæ, in figure much like holosericata. When full-grown, length about half-an-inch; tapering towards head, which is small, notched, and moveable: skin very rugose, and ridged with warts not quite so prominent as those of holosericata; bristles slightly clubbed. Colour a brownish-grey, hinder segments paler; a pale dorsal line with dark edges interrupted at the four middle folds by a whitish dot, behind which comes a black X, the arms of which reach beyond the dorsal ridges of warts; the spiracular ridge is paler than the ground, below it some oblique blackish dashes. Pupa in a cocoon just below the surface of the fine soil.

98 September,

Scutulata-though still belonging to the stiffer type, is yet an advance toward the other; being more slender and elongated in form. while still retaining the spiracular ridge, the great rugosity of skin, and the tapering to the head. When full-grown, about three-quarters of an inch long; slender, flattened, front segments more rounded, head notched and moveable; the front and hinder segments very short, so that the legs appear as if placed close together at either extremity. In repose it keeps the front segments bent down, but the head and neck turned up again, in an uncomfortable-looking attitude, suggestive of a "crick" in the neck. Colour pale ochreous, a brown double dorsal line, showing strong on the head, faint on the front segments, confluent and strongly marked behind; a brown sub-dorsal line, very plain and strong on the head to the fourth segment, then almost lost till it becomes strongly marked again on the hinder segments, but its place is marked at the segmental folds by a pair of dots; on segments 5 to 9 pale brown oblique dashes reaching from the dorsal to below the sub-dorsal line; the spiracles black, placed on a whitish ridge; belly darker than the back, being suffused with blackish, some darker dashes under the spiracles, and a darker, irregular central line.

These larvæ formed compact little cocoons in the sand, and one bit up a piece of paper, and made itself a very neat little envelope.

Bisetata.—Putting imitaria in its place as the lengthiest of the Acidalia larvæ, and rusticata as the stumpiest, bisetata seems to occupy a middle station, and, as far as I have seen, to form the connecting link between the two forms; being more slender and of more uniform bulk than the short larvæ, and more rugose than the long ones.

When full-grown, length about three-quarters of an inch, in form slightly flattened, slender, tapering very gently towards the head, which is notched, and scarcely smaller than second segment; skin rugose; bristles slightly clubbed; position in repose something like that of scutulata. The colour is variable; I think I have seen three good varieties. 1. Ground colour dingy drab, warmer on the back, and duller below; the six segmental folds between 4 and 10 showing as broad blackish-brown bands round the body, and shaped on the back by some dark oblique dashes, which reach to the spiracles, into a sort of broad, clumsy  $\Lambda$ , pointing forward; there is a double dark brown dorsal line to be traced where the ground in the middle of each segment allows it to be seen. 2. This variety was so dark on the back that the segmental folds were no darker than the ground, but the space between the double dorsal lines was distinctly paler throughout, and the oblique

8.]

shes, which in the first variety, outlined the \( \Lambda \) s, could still be traced. A pale variety sent to Mr. Buckler by Mr. G. T. Porritt, of Huddersdd. Ground colour pale ochreous; the broad bands wanting; the buble dorsal line very fine, most distinct at the folds, the sub-dorsal at and the oblique dashes fine also, all brown in colour; under the iracles a clouded, irregular, blackish stripe, shading off to the pale bey of the centre of the belly, with some oblique dashes.

The pupa, as in the other species, just under the surface of the e, loose soil.

Exeter: July, 1868.

Localities for Mesites Tardii.—From the editorial note appended to Mr. Wilkinals recent communication about Mesites Tardii, I imagine that a list of the
alities of this species may not be uninteresting. Accordingly I send a few notes
the reference to such of them as have come under my individual notice. The first
betimens I possessed were said to have been taken in Ireland, but I know not in
at part, or by whom they were taken. Afterwards I had a large series from my
and Mr. E. C. Buxton, taken by him out of a holly-tree, at Sheringham Park,
arfolk, many years ago. The first specimens I saw from the north were some
bught to me by the same gentleman, who had found them abundant, but dead, in
ash-tree in the grounds of Furness Abbey. The year afterwards I took a single
secimen (a very small one) when sweeping in the woods on Roundway Hill,
vizes.

In the spring of 1865, my friend Mr. Edleston and I went to spend a few days Grange, near Lancaster; after tea on the evening of our arrival we set out for a str walk, and had not gone many yards from the inn, when Mr. Edleston stooped we not examine an old stump of a tree built into the wall, close to the church, and me it produced a fine specimen of Tardii. I returned to the inn for our diggers, I we soon found other specimens; but the position of the stump prevented our mg much, so we proceeded on our walk, and were astonished on our return to dethe stump had disappeared, its place being filled with stone. On reaching our ting-room we found two immense hampers on the table, containing the portions the stump; a kind friend, who had heard of our trouble, having planned this prise for us. On splitting up the logs we found M. Tardii in great numbers are was another ash-tree much perforated, and no doubt containing the beetle, the large black ants had also effected a lodging there, making examination pleasant.

My next acquaintance with this species took place at Beaumaris, Anglesea; ere I met with it plentifully in the roots and stumps of several ash-trees; it was o abundant in trees near Nant, and on the north-west of the island. Mr. Buxton is since met with it near Capel Curig, and I found a stump of ash this year near nearwst, containing some broken, dead specimens. Omitting the Irish locality, of ich I know nothing, this will give at least seven distinct localities extending from Itshire to Lancashire, and from the east coast of Norfolk to the island of Anglesea the west.—Joseph Sidebotham, Beech Grove, Bowdon, 1st August, 1868.

100 [September

[The locality given by Stephens is Powerscourt Falls, Ireland, in holly. It has been taken in profusion at Killarney by Mr. E. Birchall, and commonly at Moun Edgeumbe, Plymouth, by Mr. T. V. Wollaston.—E. C. R.]

Addition of eight species of Coleoptera to the British list.—The following names of beetles are entitled to a place in our catalogue, though they do not at present appear therein:—

1. Meligethes subrugosus, Sturm.; Er., Ins. Deutsch., iii, 178, 10.

A species remarkable for the transverse strize of the elytra, occurring in German and Sweden. Found by me on the banks of the Water of Ken, in Galloway.

2. Aphodius scrofa, Fab.; Er., Ins. Deutsch., iii, 85, 44.

This insect has a very wide distribution in Europe; and is given as a Britis species in Stephens' works. But no specimens having occurred of late years, it has been rejected from our recent Catalogues; unjustly, however, for Mr. Sidebothar took a specimen two or three years ago at Southport. Though a very distinct an remarkable species, it is small, and might be easily overlooked.

3. Trachys troglodytes, Schon.; Kies., Ins. Deutsch., iv, 169, 3.

Closely allied to the rare *T. pygmæus*, but of a different colour and form, and a once to be distinguished from that species by the furrow on the front of its heabeing continued to the margin of the thorax. It occurs on the Continent and i Sweden, but is generally rare. I captured a specimen about three miles from Thornhill, in a marshy place, during March of the present year. The famil *Euprestida* was before only represented in Scotland by a single species, *Agrila viridis*; a sad contrast to the thirty-one species Sweden possesses.

4. Cryptohypnus sabulicola, Boh.; Thomson, Sk. Col. vi, 113.

This remarkably fine species cannot be confounded with any at present in our lists. It is, however, pretty closely allied to *C. pulchellus*, from which it can be distinguished by the following characters:—

C. sabulicola is very much larger, the posterior angles of the thorax are shorter and are not in the least directed outwards, the raised line commencing at the posterior angle only extends about one-third the length of the thorax, and the sculpture of the thorax is much coarser, especially on the disc. The deep furrow with which the elytra are ornamented reach to the apex.

Hitherto C. sabulicola has occurred only in Sweden, and there rarely; appears to have been unknown to Kiesenwetter at the time of publication of the Insecten Deutschlands, and it finds no place in the last edition of Schaum's Catalogue of European Coleoptera. I have taken twelve specimens on the banks of the Nith here, but only after many days' unprofitable searching for it. The first specimens I found in some heaps of flood refuse, and have since, at different times found a specimen or two at large. Mr. W. Lennon has also found two specimen on the banks of the river at Dumfries. It is not only very rare, but most difficult to secure when seen, for it is very wary, but most active.

5. Phratora cavifrons, Thoms., Sk. Col., viii, 278.

Distinguished from  $P.\ vulgatissima$  by its smaller size, regularly striated elytradifferent male characters, &c.: from  $P.\ vitelline$  by the long antenna, more oblon

form, and the broad excavation on the front of the head. It is, I believe, not uncommon, though it is difficult to understand how we can have confounded it with our other two species. Thomson restores Kirby's name, *Phyllodecta*, for the genus.

# 6. Aleochara lygæa, Kraatz.

I sent, last winter, a specimen of this insect as an Aleochara new to us, to Mr. Crotch, when he informed me that he had two specimens of it already in his collection, and that it agreed with a specimen of Aleochara lygwa he had received from Dr. Kraatz: this latter specimen he kindly sent for my inspection, and a comparison left me no doubt as to the specific identity of the specimens. Having all the appearance of A. masta, A. lygwa is closely allied to A. lanuginosa, but has the abdominal segments throughout densely punctured, and one or two other differences of form and structure not very easy to appreciate. I have found it very arely in this neighbourhood.

# '. Oxypoda flavicornis, Kr., Ins. Deutschlands, ii, 185.

Of this species I have two specimens which I captured among decaying fir oranches on the Pinkard Hills, late in the autumn of 1864.

# . Philonthus nigriventris, Th., Sk. Col., ix, 147.

Near P. cephalotes, but smaller, darker coloured, and with very thickly puncured elytra. It has the colour of P. sordidus, but cannot be confounded with that pecies on account of the close punctuation of the elytra. I have found it sparingly ere in a dead partridge, and also in a heap of cut grass in the garden, in company ith P. addendus, mihi, and twenty-two other species of the genus.—D. Sharf, hornhill, Dumfries, August 3rd, 1868.

Occurrence of Attagenus megatoma, Fab., in London.—Seeing that this insect is und in almost all parts of Europe, and in Syria, North America, the West Indies, adeira, Gomera (Canaries), &c., I have often wondered that it has not been etected in this country; especially as it is of domestic habits, like its congener, sellio, and others of its allies in our lists which have no better claims to be condered as truly indigenous.

In July last I caught a male specimen of it in Finsbury Circus, London.

Its average smaller size, narrower shape, entirely unspotted surface, and (in e male) the very long apical joint to its antennæ, at once separate it from the mmon A. pellio.—T. V. Wollaston, Teignmouth, August, 1868.

Capture of Malthodes fibulatus, Kies.—I took three specimens of Malthodes viatus (named for me by Mr. G. R. Crotch) by beating, at Mickleham, in the iddle of May last.—G. C. Champion, 274, Walworth Road, London, S., 22nd. by, 1868.

New locality for Malthodes fibulatus.—On the 15th May last I took two species of this beetle, by sweeping, at Headley Lane, near Mickleham, which I believe be a new locality for the species.—J. G. Marsh, 842, Old Kent Road, S.E., 1918, 1868.

102

Notes on Northern British Lepidoptera.—The following account of an entomological expedition may be interesting, as it relates to a district of Great Britain farther north than the usual range of Lepidopterists, and records the capture of various insects in a higher latitude than they have yet been stated to occur, so far as I know, as well as of some that deserve notice on account of their rarity.

The campaign commenced in the Shetland Islands, on 30th May, a time at which the night, so-called, is not dark enough there to tempt nocturnal insects abroad.

In the hotel where I stayed I remarked the upstart Ecophora pseudo-spretella with its ubiquitous companion End. fenestrella, and those were the only Lepidoptera I met with on the mainland. On the Wart of Bressay, a fine bold hill on the island from which it takes its name, I was more successful, as Anarta melanopa occurred not uncommonly; doubtless this species is abundant there, for during my visit it could only be obtained by being beaten from the heather,—the weather being eminently unfavourable for day-flying insects. Amphisa Gerningiana frequents the same locality, accompanied by Anchyl. unguicana.

Bidding farewell to these barren and treeless islands, I landed at Aberdeen early in June, and proceeded into Ross-shire, where I found the aspect of the country much more promising for entomological results. The south-eastern part of the country is very mountainous, and richly wooded with pine, birch, and oak. The fertile spots are, however, cases (large ones certainly) in the midst of as bleak a district as I have ever seen, and the mountains differ from the prolific summits of Perthshire by being extremely dry,—resembling in this respect almost all the northern Scotch mountains. The climate is, I am informed, remarkably equable and mild, and this may account for the occurrence of some of the insects presently to be named. I was fortunate enough to have the companionship of Dr. White of Perth, well-known for his researches in Scotch Entomology and Botany, with whom I spent some of the pleasantest days I can remember.

Of the butterdies, few occurred deserving of notice. Argynnis Euphrosyn and Selene were both common, and Cynthia cardui and Thanaos Tages were occasionally met with, besides others well known in northern localities.

The long-protracted twilight rendered "sugaring" a laborious process, but w persevered on twenty evenings during little more than three weeks, the moth generally beginning to fly about 11 p.m., so that the time of reaching hom again was about 1.30 a.m. Usually about eighty trees presented the swee allurement, and the general character of the weather was favourable,-cloud and warm with westerly winds, though they were often stronger than I quit like them to be. The result I consider satisfactory, as the average number of guests at the feast cannot have been less than a hundred and fifty. Cymatophor duplaris was not uncommon, and C. or put in an occasional appearance. Of the genns Acronycta there were the following :-leporina, megacephala (which has bee stated not to occur in Scotland), ligustri (in large numbers), and menyanthidi Mamestra anceps, the only representative of its genus, visited the sugar freely. the Noctuida many species occurred,-the best being Rusina tenebrosa (in immens numbers), Agrotis porphyrea, Noctua augur (nearly black), triangulum (a scare species in Scotland), brunnea (very common), and bella. The Hadenida proved the most numerous family, the following being taken :- Euplevia lucipara (extremel abundantly), Aplecta occulta (four or five) and tincta (very commonly), Hadena adusta (in vast numbers), contigua (commonly), and rectilinea (sparingly). Besides those named, many species less noteworthy occurred, in all about forty, and various "casuals," as Macaria notata, several Eupitheciæ, great numbers of Boarmia repandata (which came as steadily as any Noctua), and numerous Tortrices and

The sides of the hills, near rivers, proved the best ground for collecting by ay. Some of these were thickly covered with fine birch woods mingled with allows and poplars, and here many insects were to be found, notably the folowing: — Acronycta leporina (on tree trunks, &c.), Macaria notata (rather commonly, ut always on birch), Aspilates strigillaria, Ephyra pendularia, Cidaria psitticaria, latypteryx lacertinaria, Drepana falcataria, Antithesia corticana aud prælongana, nchylopera ramana, Phlæodes immundana, Mixodia palustrana, Lithocolletis viinetorum, &c. Higher up, where the ground was covered knee-deep with heather,  $uthemonia\ russula\ {
m flew}\ {
m madly}\ {
m about}, {
m with}\ {
m occasional}\ {
m specimens}\ {
m of}\ {\it Arctia}\ {\it plantaginis}.$ udorea atomalis and murana, Antithesia similana, Anchylopera unguicana, Eupæia subroseana, and other species, were also located in the same parts.

Not far from Contin, there are some large fields of broom and furze, which oduced several interesting results, especially Chesias obliquaria; of this, three four specimens occurred at dusk, flying slowly over the bushes. Depressaria rimilella was there in profusion, as also Cemiostoma spartifoliella and Dicrorampha mbagana,—the latter finding its food, no doubt, in the undergrowth at the foot the broom.

In meadows we met with Emmelesia alchemillata and Orthotonia antiquana, la few specimens of Adela fibulella, with many common Tortrices; while oak ods produced Halias prasinana and Tischeria complanella,-the latter in proion. Of the former I took a most remarkable variety, in which the green colour replaced by pale sulphur, giving the insect so unusual an aspect, that, when seen ing along in the twilight, it greatly resembled Rumia cratagata.

Fir woods contained their usual inhabitants, Ellopia fasciaria and Macaria rata, with infinite swarms of Melanippe biriviata and a few tristata.

Many species frequented flowers at dusk; the most attractive blossoms being e of Lychnis, nettle and honeysuckle. Among other insects, Plusia pulchrina Abrostola urtica were common; but the rest formed a party more numerous select.

About fern-covered slopes on hills Hepialus velleda was common at dusk; osia mesomella occurred near the River Blackwater; Cleora lichenaria in ous places; Fidonia brunneata near Contin; Larentia cæsiata in various places; dicaria on Ben Wyvis; Coremia munitata near Loch Achilty; and Coleophora osta in several localities. In my room @cophora minutella was not scarce. up on various hills Antithesia sauciana was to be taken freely; and on an ted marshy spot Eupithæcia pumilata was in extreme abundance,—I think I before saw a small piece of ground so perfectly "alive" with a single species. ae same spot Plusia festucæ was to be taken in the pupa state.

The principal larvæ that occurred were Cheimatobia boreata, Thera juniperata, Thesias spartiata.

On the whole the country seems very productive of insects, and repays a visit

104

as well by entomological results as by the rugged grandeur of its scenery. The general type of *Lepidoptera* appeared less boreal than might have been expected. Truly northern species were generally in small numbers, while many decidedly southern occurred—usually in profusion.—Thos. Blackburn, Southfields, Wandsworth, S.W.

Notes on Scottish Lepidoptera, &c.—Macaria notata in Scotland.—This insect, not hitherto, I believe, recorded as a Scottish species, has turned up in this northern district. As far as I am aware, it is not found even in the north of England, perhaps not farther north than Staffordshire. I should be glad of information on this noint.

point.

Fidonia pinetaria (brunneata) has, to the best of my knowledge, only been found at Rannoch. This district is a second British locality for this very local species. It is not uncommon in this neighbourhood.

Trichius fasciatus also occurs here, and has, I suppose for the first time, been bred. I reared a specimen from a pupa found under the bark of a fallen birch-tree. on the wood of which tree the larva probably feeds. I have also bred Quedius lavigatus and Pissodes pini from pupa found under bark of pine trees.

The following additions and corrections are necessary to my note of the Lepidoptera at Rannoch, last year:—

The larvæ of "Acronycta myrica" produced only A. menyanthidis. Additional species are, Ceropacha or, bred from pupa found at a poplar. Hadena glauca bred. Eupithecia assimilata bred from larvæ found on black currant.—F. Buchana. White, M.D., Achilty, Dingwall, Rosshire, July, 1868.

Deilephila lineata at Torquay.—Yesterday, at dusk, I had the good fortun to capture Deilephila lineata, in perfect condition; it was hovering over the flowers of the common scarlet geranium in my garden.—Charles Grinstea. Torella, Torquay, July 20th, 1868.

Captures of rare Lepidoptera.—The following list of rare and local species which I have been fortunate enough to meet with in the course of a few spare day devoted to collecting Lepidoptera, seems to me to show that this has been a mountain season. I only include in this list my captures up to the end of June.

May 9th, Darenth Wood. Eupæcilia subroseana?, Buc. Demaryella, Nep. regiel Röslerstammia Erzlebella, &c., &c.

May 15th and 16th, Norfolk. Meliana flammea, Coccyx distinctana, Co Smeathmanniana, and specimens of what may turn out to be a new species Eupacilia; it seems to be intermediate between roseana and ruficiliana; &c.

May 29th and 30th, Norfolk. Eupacilia anthemidana, Phycis abietella, &c., June 6th and 8th, Norfolk. Acidalia rubricata, Agrophila sulphuralis, Spilo sticticalis, Eup. natulana, Ser.? herbana, Gel. lathyri, and Gel. pictella, &c., &c.

June 13th and 15th, Folkestone. T. chrysidiformis, T. Bondii, Eud. ingrate Ser. euphorbiana, C. microgrammana, A. decemguttella, Eup. rupicola, larvæ of hippophäeella, &c., &c.

June 20th, Norfolk. A. subscriccata, Ac. inornata, Ar. cnicana, O. reliquel 1 specimen. June 27th, Wicken Fen. M. arundinis, Ac. immutata, Hyria auroraria, Collin spansata, Nascia cilialis, Bactra uliginosana, A. funerella, C. Lienigiella, Gelechia subdecurtella, suffusella, and inornatella.

I also bred H. Christiernana from larvæ found at Shoreham, on May the 21st.— Thomas De Grex, 23, Arlington Street, S.W., July 15th, 1868.

Note on Depressaria subpropinquella and D. rhodochrella.—I collected at Folkestone, this year, on the 15th of June, a number of larvæ of Depressaria subpropinquella,
and from them bred a nice series of the perfect insects: among them came out one
specimen of Depressaria rhodochrella, with the very conspicuous dark head and thorax
which distinguishes that supposed species. As there was nothing in the box in
which my larvæ were kept but thistle leaves, I think we must be satisfied that D.
rhodochrella is only a variety of D. subpropinquella.—ID.

Acronycta alni near Manchester.—Among other pupæ obtained in the winter months was one of D. alni, which produced an imago in the middle of June.—Joseff Leigh, 27, Tomlinson Street, Hulme, 15th July, 1868.

Deilephila lineata near Derby.—A specimen of D. lineata was brought to me alive on the 2nd of August, by my young friend Mr. F. Balgny, who lives about a mile from Derby. This is the first record of the species that has come to my knowledge in this neighbourhood.—Heney Evans, Darley Abbey, Derby.

Deilephila lineata in Kildare.—I captured, on Saturday evening last, a fine specimen of D. lineata; it was hovering over Verbena flowers, at about 8 p.m.—John Douglas, Kilkea Castle, Kildare, 18th August, 1868.

Capture of an hermaphrodite Satyrus Semele.—It may interest the readers of the Magazine to learn that a fine example of hermaphrodite Satyrus Semele (right side &, left ?) has been captured this season by Mr. James Garrett, on his garden wall, situated in the Woodbridge Road, Ipswich. The species abounds on Rushmere Heath, some two miles from the spot; and perhaps it may be open to conjecture of the peculiar organization of this specimen may explain its being found so far away from its home and relatives?—Edward Hopley, 14, South Bank, Regent's Park, August 7th, 1868.

Capture of Pieris Daplidice near Margate.—While hunting Colias Hyale, Acontia activosa, and Aspilates citraria, in the lucerne fields near Marsh Bay, Margate, last Wednesday, I captured a female specimen of this rarity. Unfortunately it is not in good condition.—Julia E. Cox, West Dulwich, S., 6th August, 1868.

Pieris Daplidice, Argynnis Lathonia, &c., at Margate.—On the 27th July I tarted for a morning's ramble along the cliffs to the east of Margate. Just beyond he Newgate Coast-Guard Station there are some patches of lucerne, and I had early reached the first patch before I took a male C. Hyale. A high north-easterly wind had prevailed for some days previously, in spite of which I had on the Saturday aken a Hyale, the first I had ever captured or seen alive, and my hope was that I

106 (September,

might perhaps catch another, which led me to the lucerne patches. I did not then know that Hyale was so abundant this year. In Marsh Bay, about a mile and a-half to the west of Margate, I saw them flying by dozens, but by the 7th August they were so much worn as to be hardly worth catching. But to return to the morning of the 27th July. I had hardly boxed my first specimen of Hyale when I saw upon a spray of lucerne, just in front of me, a beautiful Argynnis Lathonia; this I caught, and within ten minutes, and within a few yards of the same spot, I took a female Pieris Daplidice, a very fine specimen, measuring two inches across the wings. Both this and Lathonia were in splendid condition. I fancy it has not often fallen to the lot of a collector to take Hyale, Lathonia, and Daplidice within the space of half-an-hour.—Aethur Cottam, Stone Grove Cottage, Edgware, August 13th, 1868.

Argynnis Lathonia at Ramsgate.—On the 7th of this month I captured A. Lathonia at the above locality. On the 30th ult. I found Lycana Corydon in Hyde Park.—W. G. Armstrong, 92, King's Road, Chelsea, August, 1868.

Capture of Agrotera nemoralis.—I captured a poor specimen of this rare insect on the 11th of June, at the same spot where I took one in 1866, as recorded in the Magazine [Vol. iii., p. 207].—E. N. BLOOMFIELD, Guestling, August 10th, 1868.

Sphinz convolvuli and Deilephila lineata at Guestling.—On Thursday last I had brought to me a very fine specimen of S. convolvuli, which had flown into a house in an adjoining parish; and this morning, just before day-break, I took D. lineata hovering at scarlet geranium flowers in my garden: the humming noise it made when flying was very marked.—ID.

Chrosis emphorbiana bred.—I have much pleasure in recording the fact that I have lately been successful in rearing Chrosis emphorbiana, from larvæ which I found feeding in the heart of Euphorbia amygdaloides in this neighbourhood.—W. PURDEY, 15, Grove Terrace, Folkestone, August 13th, 1868.

Colias Hyale and Argynnis Lathonia at Colchester.—It will probably interest the readers of the "Entomologist's Monthly Magazine" to learn, that on Saturday last, August 15th, I captured in this neighbourhood one specimen of Colias Edusa, twelve of Colias Hyale, and one of Argynnis Lathonia. The Lathonia appeared to me, when it first settled down on a lucerne blossom before my astonished eyes, to be the freshest and loveliest specimen I had ever beheld; but either this was my fancy, or else I must have been exceeedingly clumsy in capturing it, for after killing it, I found it was not in such good condition as I had hoped.—W. H. Harwood, St. Peter's, Colchester, August 17th, 1868.

Abundance of Colias Hyale in 1868.—In some lucerne fields in the neighbour-hood of Gravesend I have found C. Hyale tolerably abundant this month. On the 5th, being accompanied by a friend, fifty specimens, including several fine females, were taken between us, in the course of about two hours' collecting in the morning. C. Edusa has also been plentiful. My friend, Mr. Howard Vaughan, has also taken both species in the same locality.—P. Basden Smith, Admiralty, Somerset House, 15th August, 1868.

107

Colias Hyale near Ramsgate.—On the 10th inst. my brother captured, in a lucerne field situated between Ramsgate and Deal, 22 Colias Hyale (18 3 and 4 2), mostly in very fine condition. One 2 has very fortunately desposited about 40 ova.—Albert H. Jones, Eltham, 13th August, 1868.

Deilephila lineata, Acronycta alni, §c., in Sussex.—On some Ontario poplars which I had planted last spring in a rough, heathy field, I found two young larves of C. bifida, which fed up well, and three eggs of the same, which, however, did not hatch. Walking through the same field on the 9th August, about one o'clock, I started a hawk-moth, which flew a few yards, and, on being captured, proved to be D. lineata, in good condition. A larva of A. alni was found in a wood near, and kindly given me by its finder, a few days before.—F. Merrifield, Belair, Cuckfield, 13th August, 1868.

Sphinx convolvuli and Colias Hyale near Birmingham.—On August 8th a female Sphinx convolvuli was brought me, which had been found by a gardener near here, in a conservatory, probably attracted there by some Petunias. Yesterday morning (August 11th) I caught a fine specimen of Colias Hyale (male) flying gently in a clover field close at hand. Is it not very unusual for a maritime butterfly like this to be taken so far inland?—George H. Keneick, Church Road, Edgbaston, Birmingham, 13th August, 1868.

Acidalia emutaria at King's Lynn.—This pretty little species is still rather carce in most collections, and few localities are known for it. Mr. E. L. King, of King's Lynn, met with one specimen last year, and this year has taken two, June 3rd and 26th, about 9 p.m., in his garden, which is situated not far from the salt narshes. The specimen captured by Messrs. Fenn and Jones, which furnished the ggs from which the Rev. J. Hellins reared the larvæ (see E. M. M., vol. iv., p. 88) as taken in a marshy locality.—H. T. Stainton, Mountsfield, Lewisham, July th. 1868.

Eupithecia consignata bred in Belgium.—When passing through Brussels last eek, Dr. Breyer asked me the name of a Eupithecia he had bred; I replied, consignata;" but immediately enquired from what he had bred it, and did he new the larva? He replied that he did not know the larva, but had bred the oth from a pupa found under the bark of an apple-tree. At that time he and I are alike ignorant that the species had been already bred in this country.—In.

Note on double broods in hot seasons.—I had a full-grown larva of Smerinthus puli at the end of last June, which became a chrysalis during the first week in ly, and was much surprised to find the perfect insect emerged yesterday.

I do not suppose this is a singular instance, and quite expect to hear that many secies which appear as early in the year as S. populi are this season exceptionally able-brooded.—A. H. Taylor, Folkestone, 3rd August.

Occurrence of a Plusia new to Britain.—Mr. D'Orville has asked me to forward you a Plusia caught by him in his garden, and considered by us to be something v.—John Hellins, Exeter, August 21st.

\*\*\* The above is a fine example of Plusia ni, Engramelle.—H. G. K.

[September 108

Query concerning Charocampa Elpenor .- A friend of mine had a larva, about an inch long, of C. Elpenor, brought to him about three weeks since, which was found on log-beam near here. We afterwards found about twenty at the same spot, and also three or four feeding on bed-straw. I had four pupe from these, and this morning, to my surprise, two imagos had emerged. Has any other entomologist experienced this unusual occurrence?

My friend had a Smerinthus populi, apparently fresh from the pupa, given to him about a week since. Could this be from a last year's larva?-A. MATTHEWS, Oxford, August 5th, 1868.

\*\*\* We have no doubt that these insects pertained to a second brood, de-Similar instances veloped through the unprecedented heat of the present summer. constantly occur in hot seasons [vide preceding note].-Eps.

Description of the larva of Fidonia pinetaria, Hub. (brunneata, Steph.) .- In October, 1867, Mr. Buckler sent me five eggs of this species, which had been kindly given to him by Dr. Buchanan White, of Perth. On receiving them, I examined them carefully under my microscope, and made the following description:-

The egg is oval in outline, but flattened, the upper-side being even depressed in the middle; the whole surface covered with reticulations—generally hexagons, but some only pentagons, in shape; and at each angle where the lines of the reticulation meet, there is a little raised bright white knob (a peculiarity I have not yet observed in any other egg), the whole egg looking as if set with tiny pearls, on a ground-colour of shining salmon-pink.

About the end of February, 1868, the eggs grew darker, and between March 2nd and 8th four larvæ emerged, the fifth dying unhatched. After a little hesitation they began to eat buds of whortle-berry (Vaccinium myrtillus), but somehow, within a few days, two of them died. The two survivors, however, grew on steadily; and from being dark brown at their first appearance, after a moult or two began to assume a striped dress: the ground-colour was now pale grey-almost white; the dorsal and supra-spiracular lines almost black, with an intermediate sub-dorsal line of brown; and the spiracular stripe tinged with yellow.

About April 24th the larger of the two larvæ seemed full-grown. At tha time it was rather over half-an-inch in length, of uniform bulk, cylindrical, the hea horny, the skin smooth, but puckered along the spiracles. The colouring wa disposed in a multiplicity of fine lines, which I now give in due order.

The dorsal line-widening in the middle of each segment-dark green, closel edged with almost black threads; then a thin white line; then the sub-dorsal lin of pale pinkish-brown outlined with darker brown; then another thin white line then three clive brown lines (the middle one palest, and the lower one darkest partly showing distinct, and partly run together, so as to form a stripe just about the spiracles.

The spiracular line broad, white, but tinged with yellow in the centre of each segment. The belly of a dirty white, with some oblique dashes, and lines of brow

This larva went to earth at the end of April, and the moth from it appeared

June 1st .- J. Hellins, Exeter, June 23rd, 1868.

OTES ON THE EARLIER STAGES OF SOME SPECIES OF LITHOSIDE.

BY THE REV. JOHN HELLINS, M.A.

The lichen-feeding Lithosidæ are generally so troublesome to anage, that I feel a sort of satisfaction in announcing that I have this mmer succeeded in obtaining the image of four out of the five species, use eggs last year came into my care. Not that I have very much boast of, for although in the case of griscola I believe I stumbled upon e at least of its natural pabula, and so kept alive nearly twenty larvæ; the other species it was but a scanty remnant that appeared in the nged state, and mesomella perished before half grown.

Lithosia molybdeola (Gn.), sericea (Gregson). Mr. Doubleday ost kindly transmitted to me some eggs he had received of this species, d by the time the parcel reached me (July 26th, 1867,) the young we had appeared. Most of the brood must have soon perished, but the three which lived till September were then about half-an-inch long; d the two final survivors spun up before the end of May, and appeared moths on July 3rd and 4th, 1868.

I could never see that they are any food I gave them freely; but different times I saw that they had eaten a little of various lichens on trees or banks, wall moss, withered sallow and oak leaves, slices of mip and carrot, and knot grass, and they must have thriven as well they would have if they had been at large, for the two bred moths re not at all smaller than captured specimens.\*

I noticed, not in this species only, but in all the Lithosidæ larvæ I d, that the characteristic markings and tints were assumed very early long before they had attained a quarter of their growth.

When full-grown this larva is rather more than three quarters of inch in length; moderately stout, uniform in bulk; head very hard I shining; all the tubercles crowned with tufts of short hairs, mixed that a few longer ones; of the dorsal tubercles the front pair are small, I the hinder pair very large.

The ground colour, when seen between the tufts of hair, is a dead ckish-grey; but the segmental folds are black; there is a rich vely, very black, dorsal stripe; the sub-dorsal line, being broken on a segment by the hinder tubercle with its tuft of hair, must be her called a row of elongated particoloured spots, each beginning on a hinder part of a segment, and continued across the fold into the st segment, until stopped by the tubercle; the colours being white

<sup>\*</sup> I trust, from what Mr. Doubleday tells me, that Mr. Greening has now a clue to the right food.

110 COctob

for about half the spot, and the tint of a robin's red breast for the remainder, but owing to the position of the white portion so near the segmental fold, only the red hinder part of the spot is to be seen, except when the larvæ is stretched out in walking; on segments 2 to 4 the spots are altogether whitish; immediately below comes another velved black stripe, broadest at the centre of the body, and tapering consider ably towards the head, but less so towards the tail; just above the fectomes a greyish-ochreous interrupted stripe, edged on both sides with dark brown line; the tubercles and short hairs are brown, the longerones black.

The pupa stout, reddish-brown in colour; enclosed in a very slight web of silk, under cover of a stone or piece of moss.

Lithosia griseola. Eggs kindly sent to me by Mr. Doubleda August 11th, 1867, larvæ hatched August 15th; by the end of November nearly half-an-inch in length; full grown during May, moths of June 14th to 27th, 1868.

The larvæ fed at first on withered leaves, especially delighting triddle decaying sallow leaves full of holes; but I saw them also eat little clover, knot grass, and various lichens and mosses; early in the spring they attacked vigorously some slices of turnip, but afterward on attaining some size, they fed away steadily on *Lichen caninus*, which I have since learnt has been noticed to occur where the moth is more abundant, and no doubt forms part of the natural food of the larva.

When full grown the length is quite an inch, the figure stout an uniform; the head small; all the tubercles tufted with stiff hairs, which are short on the back, and longer on the sides, with a few of ext length on the second and thirtenth segments.

The colour is a rich velvety blackish tint above, dingy blackish brown below; the central portion of the back is, however, to be ditinguished as a stripe of more intense black than the rest; there is sub-dorsal orange-ochreous stripe, which being interrupted by the theoretes appears on segments 4 to 12 as a row of wedge-shaped marks but on the 2nd segment there is no interruption, and on the 3rd the whole dorsal area is occupied by a large orange patch, bisected for part of its length by the deep black dorsal line; and on the 13th the sub-dorsal wedges are replaced by two large squarish marks; the hair are dark brown; the head a most brilliant black.

Some of the larvæ had the orange marks very faint indeed; and two of them had no orange marks at all, except on segments 2, 3, and 13, thus presenting a good variety.

The pupa short, stout, reddish-brown in colour, the anal segments ill enveloped in the cast larva skin (I notice this to be the case with the other species also), enclosed in a thin web, in which bits of moss and lichen were sometimes inwoven, and placed under any protecting over, such as a stone.

The moths I bred were very fine, much larger than any I ever ptured, and although varying somewhat among themselves in the pth of their grey tints, yet none of them were at all like stramineola.

Lithosia mesomella. On two or three previous occasions, I kept a read or two alive from summer till after Christmas, having fed them on allow leaves, green or decaying; and last spring I managed to retain the even until the new sallow leaves were out again, but it would not sume feeding after hybernation, and so died; it was then quite half-inch in length; in colour a velvety-black all over, and covered on ery segment, save the head and 2nd, with tufts of singular spatulate rk grey hairs. I should much like to procure some sort of food on eich this species would feed up, for they would never take to any sort lichen I gave them.

Lithosia plumbeola (complanula). I will only remark that the wa of this species assumes its lateral reddish-orange stripe at its first second moult, when but little over a line in length; also that it ems to feed and grow more slowly than the other species.

Calligenia miniata. Eggs obtained from a female captured July th, 1867; the larvæ hatched before the end of the month; fed slowly t almost continuously till the end of May, by which time six out of neteen survived to spin up; the moths out June 19th—30th.

The food chosen at first was a sallow leaf, which had become damp of rotten by being kept in a glass stoppered bottle; afterwards when used outdoors in a flower-pot they ate withered oak and sallow leaves divarious lichens; in spring they nibbled the slices of turnip put in the them as traps for slugs, and at last settled down steadily to eat a red waxy tips of *Lichen caninus*, and fed up to quite full size on so food. In a state of nature I understand they are found feeding on the lichens that grow on the boles of oak trees.

The eggs of miniata are very different from the usual round pearly do of the Lithosiæ, being more fusiform in shape, rich yellow in our, and placed on end with great regularity at a little distance meach other in rank and file; my batch of eggs was deposited in rows, viz., three of five eggs each, and one of four.

The larvæ from the first were little dingy foggy-looking for looking with a quantity of fine hair on their backs; and although after that last moult their plumes became denser and darker than before, the description of the last stage is applicable throughout.

When full-grown, the length is a trifle over half-an-inch, the half-an-inch, the half-an-inch, the half-an-inch project before and behind making it look a little longer, the figuration stout, uniform in bulk; the skin very shining, but densely covered with plumes; segments 2 and 13 are furnished only with short simple hairs but the other segments have each six whorls of wonderful plumos verticillate hairs, those on 3 to 7 being full one-eighth of an inchigh, and those on 8 to 12 a little shorter, while along the sides an just above the feet are tufts of plain hairs; when looking at one of them in motion, I could not help mentally comparing it to an animate hearse with palish plumes.

The colour of the skin, when it can be seen, is a waxy dark drab the plumes from the head to segment 7 are blackish mouse colour, an the rest a paler tint of the same. When disturbed, the larva puts it nose and heels together, bending itself into a circle, with the tuft standing out apart.

The cocoon is a long oval in shape, very slight but close in texture the silk wonderfully interwoven with the cast-off plumes stuck upright so that whilst fresh and uninjured by rain it might at first sight the mistaken for the larva; one which I watched in progress was completely finished, so far as outward appearance went, in four-and-twent hours. The pupa is short, reddish-brown in colour, the cast larva-ski adhering to the anal segments.

Mr. Buckler kindly allows me to incorporate with my notes the following descriptions made by him of two other species of *Lithosia* which he has lately figured from specimens supplied by the kind liberality of Mr. Machin.

Lithosia helveola. Four larvæ, not far from full growth, receive on June 13th; their food being a large coarse lichen growing on th bark of yew trees. In a few days they had spun rather loose cocoon with a few grains of earth attached to the silk, on the under-side of the pieces of bark. The moths appeared July 2nd—6th.

When full grown, the larva is nearly three quarters of an inch is length, moderately stout, with the posterior segments tapering slightly towards the tail. All the tubercles furnished with tufts of hair.

113

The ground colour of the back varies-being pale grey, whitishey, or white; and the colour of the sides and belly is grey, brownishey, or greenish-grey; there is a sub-dorsal stripe of black, separating e white back from the grey sides, and itself interrupted by one of the nder pair of tubercles on the back of each segment; down the centre the back run two black lines, which represent the dorsal stripe, aparing united at the hinder end of all the segments, as well as on the ont of all, except the last four, and interrupted through the middle of e others; and between these lines and the sub-dorsal stripe comes other fine black line on the hinder half of each segment; on the 4th gment the space between the dorsal lines is filled up with black, forma conspicuous lozenge-shaped mark; on the 8th segment is another ack mark, but triangular in outline; and on the 9th segment the subrsal black stripe is interrupted by a white spot, which extends someat into the grey colour of the side; and along the side run two dark ownish interrupted lines; the head is dark brownish-grey, lobed and ckled with black; the tubercles are grey or brownish-grey, and the its of hair growing from them are of the same tint.

68.

Lithosia aureola. The larva received on 19th August feeding upon aens attached to oak.

This larva is very active in its habits; not yet mature, being but le more than five-eighths of an inch in length, rather slender, and of rly uniform thickness, but tapering very little posteriorly. The ercles all tufted.

The ground colour of the back is white, but this appears only as r white lines separating the black dorsal, intermediate, and broader -dorsal stripes; and this pattern is interrupted at the 4th, 8th, and h segments by dark brownish-black patches covering the back, and the 4th and 12th looking almost like humps from the greater denses of the tufts of hair; and on the 9th segment the dorsal stripes absent, leaving the whole area as a conspicuous whitish spot; the s, belly, and legs are brownish-grey; the folds between segments 3 4 are white; there is a white spot just above the legs on the 3rd, a white blotchy line similarly placed on the 4th; the 2nd segment ark brown, with a reddish margin in front, and a longitudinal short ak from it of the same tint on the sub-dorsal region; the dorsal rcles of all but the three dark segments are orange-red, bearing vnish-grey hairs, the first of each dorsal pair being small in size, the second behind very large, so as to project beyond the sub-dorsal e, on which they are placed, into the side, and behind each tubercle

114

of this pair comes a white dot; along the sides are two rows of sin tubercles, the lowest being just above the legs, thickly furnished brownish-grey hairs; a few hairs longer than the rest proceed from thoracic and anal segments; the head itself is blackish-brown.

This species spins up in autumn, and passes the winter in the p state.

Exeter: September 5th, 1868.

P.S.—Eggs or larvæ of complana or stramineola would be most ceptable now.

LIST OF CAPTURES OF HEMIPTERA IN PALESTINE AND SYRI
TOGETHER WITH DESCRIPTIONS OF SEVERAL NEW SPECIES.

BY J. W. DOUGLAS AND JOHN SCOTT.

(Continued from page 68.)

Section CAPSINA.

Division BICELLULI.

FAMILY PITHANIDÆ. Genus PITHANUS, Fieb.

31.—Species Pithanus Marshalli, Doug. & Scott.

(Forma incompleta) Niger; elytris membrana carentibus, clavo intincto, corio valde abbreviato, postice rotundato, margine antico postico dilute stramineis; pedibus dilute piceis, coxis nigris, apice flavido; antennigris, articulo primo, basi excepto, dilute stramineo, secundo lurido.

Long. 21 lin

Undeveloped form black.

Head shining; between the eyes two short, transverse, oblique, brownish-yel streaks. Antennæ clothed with very short hairs; 1st joint pale yellow white, base black; 2nd pale fuscous-yellow, base and apex somewhat dark 3rd and 4th black, base of the 3rd fuscous-yellow; behind each eye, on under-side, a yellowish spot. Rostrum yellowish, 1st joint and the apex rowly piceous.

Thorax—Pronotum with a faint central keel, disc next the anterior margin flatter into a somewhat collar shape, finely wrinkled transversely, and with a depression on each side of the centre in a line with the inner margin of eyes, posteriorly very much constricted; the central portion sub-globose, wit puncture in the middle on each side of the central keel. Scutellum convex front, flattened posteriorly and very finely wrinkled transversely. Ely abbreviated, only covering the 1st segment of the abdomen. Clavus flat, it distinct from the corium. Corium rounded posteriorly, the entire anteriors posterior margins yellowish-white, broadest at the basal angle. Sterne black. Prosternum xyphus, at the apex brown. Legs brownish-yellow. Co

black, apex yellow. Thighs, 3rd pair at the base on the under-side piceous, each pair with two longitudinal rows of piceous spots on the upper, and one on the under-side. Tibiæ yellowish, clothed with long, fine, erect, brown hairs; apex of all the pairs very narrowly brownish. Tarsi, 1st and 2nd joints yellowish, 3rd and claus piceous.

6.

Momen—above black, underneath black, the centre, as far as the genital segments, broadly yellowish white. Connexivum yellow.

Taken at Nazareth at the roots of a dwarf thorny plant, where it s abundant in April.

- € Extremely like P. Märkeli, but easily separated from that species the differences in the antennæ, and the rounded and entirely pale ggin of the elytra.
- g We have named it after the Rev. T. A. Marshall, whose collection acclemiptera has been always at our service.

TYOTE.—At page 37, for Pithanus Flori, read Pithanus Marshali.

#### FAMILY DERÆOCORIDÆ.

- 33.—Species Dermocoris amenus, Doug. & Scott.
- 3. Stramineus et niger, dilute pubescens; capite nigro, linea media maculam parvam postice crescente straminea; antennis piceis; pronoto ro, collari nec non fascia pone callum, stramineis; corio dilute stramineo, a magna triangulari maculaque interiori piceo-nigris; cuneo læte strateo, apice anguste nigro, membrana piceo-nigra, extus saturatiori; sterno ro-rufo; pedibus rufo-brunneis, fulcris, nec non femorum apice, piceis; is luridis, basi apiceque piceis; abdomine subtus stramineo, segmentibus mis nigris.

  Long. 3½ lin.
- $\mathcal{S}$ . Pale yellow and black, somewhat sparingly clothed with short, ressed, pale hairs.
- It black, shining. Crown with a small yellow spot in the middle of the posterior margin, to which is joined a fine central line, extending to the central lobe of the face. Antennæ piceous; 1st joint pitchy-brown. Rostrum pitchy-red, apex piceous.
- ax—Pronotum black, shining, collar and an irregular broad band behind the callosities yellow; disc posteriorly convex. Scutellum convex, yellow, considerably raised above the clavus, anterior portion concealed beneath the posterior margin of the pronotum. Elytra—Clavus pitchy-black, between the inner margin and the nerve almost flat, disc very finely wrinkled transversely, the sutural nerveat the apex, and the apex itself, very narrowly pale yellow. Corium pale yellow, almost white, anterior margin piccous, except the basal portion, disc with a large triangular pitchy-black patch extending to the anterior margin, its inner margin convex, apex abrupt, slightly concave, its base occupies the entire width of the cuneus suture; on the margin at the inner posterior angle a small black spot. Cuneus bright yellow, apex narrowly black. Membrane pitchy-

black, with a darker triangular patch next the anterior margin extendible the apex; inner marginal and cell nerves black; apex of the large cell wip pale margin, below which, is a short, transverse, dark streak; between the sof the cell nerves and the anterior margin a pale blotch divided by a transveptchy-black line, reaching the latter a little below the apex of the cun Sternum pitchy-red. Legs brown-red. Fulcra piceous. Thighs piceous at apex. Tibiæ dusky yellow, with short, somewhat spinose, black hairs; and apex of all the pairs piceous.

Abdomen underneath yellow, clothed with fine, pale hairs, genital segments blac

Nearly allied to D. sexguttatus, Fab., to which it bears a gresemblance.

The above description has been drawn up from a single  $\Im$  specimation taken in the plains of Jordan by sweeping low plants in April.

### Genus Grypocoris, Doug. & Scott.

Corpus elongatum. Caput, oculis inclusis, triangulare, lobo med longo, ante clypeum convexum valde producto. Antennæ corporis longid dine, articulo secundo clavato, primo triplo longiore. Rostrum inter coa posticas extensum. Pronotum elongatum, collari angusto, callisque duob instructum, lateribus antice constrictis, angulis posticis acutis, elevat Scutellum triangulare, sub-equilaterale. Elytra maris abdomine longios Pedes postici longissimi, tarsorum posticorum articulo ultimo longissimo.

Elongate, sides narrowing posteriorly.

Head, including the eyes, triangular, measured through their central almost equilateral. Crown flattish convex. Clypeus very convex apex in a line with the base of the antennæ; antenniferous processes short, in a line with the centre of the lower half of the eye Face, central lobe long, very prominent, projecting considerabe in front of the clypeus, convex, base acutely rounded, side lobe longish, rounded outwardly. Antennæ as long as the body, legiont cylindrical, shorter than the pronotum, slightly curved on wardly, rounded and narrowed at the base on the inside; 2nd through times as long as the 1st, slightly thickened towards the apex; 3st and 4th filiform; 3rd two-thirds the length of the 2nd, 4th more than one-half the length of the 3rd. Eyes somewhat prominent viewed from above semi-oval, from the side oval. Rostrum reaching to the 3rd pair of coxæ, 1st joint stout, almost reaching to the xyphus of the prosternum.

Thorax—Pronotum longish, as wide on the posterior margin, as long with a narrow collar and two callosities, sides constricted in front to behind the latter, then gently sinuate to the acute, raised hinder and

gles; posterior margin almost straight across the scutellum, rounded towards and at the hinder angles; disc posteriorly flattish, convex, deflected to the callosities. Scutellum triangular, almost equilateral, convex. Elytra longer than the abdomen. Cuneus long, triangular. Sternum—Prosternum xyphus, triangular, concave in the centre, the sides slightly rounded and margined. Mesosternum slightly elevated posteriorly, convex above, and with a central channel, sides flattish, posterior margin slightly rounded. Metasternum convex, centre convex, with a depression on the sides, apex rounded. Legs longish, 3rd pair longest, 1st and 2nd sub-equal. Tarsi, 3rd int of the 3rd pair longest, 1st and 2nd sub-equal.

8.

#### 34.—Grypocoris Fieberi, Doug. & Scott.

- d. Griseo-ochraceus et niger. ♀. Sanguineus et niger.
- 3. Capite nigro nitido; antennis piceis, articulo primo medio, sendo basi, ochraceis; pronoto dilute ochraceo, medio triangulariter, callis trgineque postica piceo-nigris; scutello dilute ochraceo nitido; clavo sco, nervo stramineo; corio dilute griseo-ochraceo, vitta juxta clavum sca; cuneo dilute ochraceo, apice anguste nigro; membrana fusco-nigra; prno rufo; pedibus ferrugineis.
  - § . Similiter picta, nisi quod color sanguineus pro ochraceo accidit. Long. §  $3\frac{1}{4}$ , § 4 lin.
  - ∂ pale greyish-yellow and black, ♀ deep red and black.

Head black, shining. Antenna, 1st joint pale yellow, base and apex narrowly piceous; 2nd black, base yellow; 3rd and 4th piceous, base of the 3rd yellow. strum reddish-yellow; 3rd and 4th joints piceous.

orax-pronotum pale yellow, very sparingly and delicately punctured, collar pale yellow, callosities pitchy-black, joined together in front by a short, broad, transverse keel, posterior margin and hinder angles pitchy-black, disc with a triangular pitchy-black patch in the centre, its apex next the callosities, its base on the posterior margin. Scutellum shining, anterior portion black, concealed beneath the posterior margin of the pronotum, posterior portion pale yellow. Elytra longer than the abdomen, rather sparingly clothed with very short, sub-depressed, blackish hairs. Clavus fuscous, finely shagreened, inner margin piceous, nerve pale yellow, the colour broadest at the base and apex. Corium pale greyish-yellow, extreme anterior margin piceous, 1st nerve slightly piceous at the base, disc with a longitudinal, broad, fuscous streak between the claval suture and the centre, the colour becoming darker towards and at the posterior margin, the base pale greyish-yellow; inner posterior angle next the claval suture slightly grey-yellowish, the colour vanishing; posterior margin along the base of the cuneus piceous. Cuneus pale yellowish, anterior margin faintly piceous, apex narrowly black. Membrane deep fuscous black, inner

marginal and cell nerves black; cells and a triangular patch next the ant margin, extending from below the former to the apex, almost black, Ster reddish-brown. Prosternum xyphus fuscous, margins pale yellowish. A sternum somewhat fuscous in the centre. Legs ferruginous. Thighs, pair with two longitudinal rows of brown spots on the inside; 2nd same as 1st, with the addition of a row along the upper-side; 3rd slightly flattened the sides, with two rows of brown spots on the inside, one down the middle the outside, and one along the upper-side. Tibia, apex fuscous, with stout somewhat spinose black hairs. Tarsi fuscous-brown, 1st joint fuscous. Clubrown.

Abdomen, underneath yellow, last genital segment brown.

2. The characters are precisely as in the other sex, except that the yel markings are here replaced by deep carmine red, and the margins of the dominal segments at the base black. Elytra as long as the abdomen.

There are only a  $\delta$  and  $\circ$  in the collection taken on the plains Jordan by sweeping low plants in April.

(To be concluded in our next.)

# A LIST OF GALL-BEARING BRITISH PLANTS. BY H. W. KIDD\* AND ALBERT MULLER.†

Hoping in the course of a few months to commence a descriptilist of galls, we beg your insertion of the following Catalogue of Plant The majority of them we know possess galls in Great Britain fropersonal observation. Those marked with a note of admiration (!) are plants said on reliable authority to possess galls; while those marked with a note of interrogation (?) require inspection, either from the fact of their possessing galls on the continent, or upon which groexcrescences of doubtful origin, or having been hinted at as probable possessing galls.

Plants, not indigenous, possessing galls in this country, are preceded by an asterisk.

? Ranunculus bulbosus, Linn.

Papaver dubium, L.

rhæas, L.

! Barbarea vulgaris, Br.

Brassica oleracea, L.

rapa, L.

Sinapis arvensis, L.

! Reseda lutea, L.

Viola odorata, L. canina, L.

\* Godalming, Surrey.

- ? Silene nutans, L.
- \* Althæa rosea.

Tilia intermedia, D. C.

grandifolia, Ehrh.

Acer campestre, L. pseudo-platanus, L.

- \* Æsculus hippocastanum.
- ! Geranium sanguineum, L. Rhamnus catharticus, L.
- ! Sarothamnus scoparius, Koch.

<sup>† 2,</sup> Camden Villas, Penge, S.E.

Ulex nanus, Auct. Genista tinctoria, L. anglica, L. Medicago lupulina, L. Lotus corniculatus, L. Astragalus glyciphyllus, L. Vicia cracca, L. sepium, L. Prunus spinosa, L. cerasus, Auct. Spiræa ulmaria, L. filipendula, L. Potentilla reptans, L. Rubus spec. Rosa spinosissima, L. micrantha, Sm. canina, Auct. Mespilus germanica, L. Cratægus oxyacantha, L. Pyrus malus, L. aria, Sm. aucuparia, Gtn. Epilobium, spec. Circæa, spec. Tamarix. Bryonia dioica, L. Cornus sanguinea, L. Daucus carota, L. Sambucus nigra, L. Viburnum opulus, L. lantana, L. Galium verum, L. saxatile, L. aparine, L. Hieracium pilosella, L. murorum, Auct. umbellatum, L. boreale, Fries. Faraxacum officinale, Wigg. Arctium lappa et bardana. Carduus arvensis, Curt.

Centaurea nigra, L. ? Artemisia campestris, L. vulgaris, L. ? Chrysanthemum leucanthemum, L. Achillea ptarmica, L. millefolium, L. Phyteuma orbiculare, L. ! Vaccinium oxycoccos, L. ? Ilex aquifolium, L. Ligustrum vulgare, L. ? Fraxinus excelsior, L. Convolvulus, spec. arvensis, L. ? Veronica beccabunga, L. chamædrys, L. Linaria vulgaris, Mill. \*! Salvia officinalis. Thymus serpyllum, L. ? Origanum vulgare, L. ! Teucrium, spec. ! Lamium galeobdolon, Crantz. Stachys sylvatica, L. Nepeta glechoma, Benth. ? Atriplex, spec. ! Polygonum aviculare, L. amphibium, L. (var. terrestre). Rumex acetosella, L. Euphorbia cyparissias, L. Buxus sempervirens, L. Urtica dioica, L. Ulmus suberosa, Ehrh. montana, Sm. Quercus robur, L. Fagus sylvatica, L. Corylus avellana, L. Alnus glutinosa, L. Betula alba, L. Populus tremula, L. nigra, L.

Salix fragilis, L.
cinerea, L.
aurita, L.
caprea, L.
repens, L.
herbacea, L.
! Pinus sylvestris, L.

\* Abies communis, L.

? Juniperus communis, L. Taxus baccata.

! Juncus, spec.

? Triticum repens, L. Pteris aquilina, L.

In conclusion, we may add that we shall be greatly obliged to any observer who will kindly furnish us with notes respecting galls on any of the plants marked "!" or "?" (also on plants not mentioned at all in our list), either in the pages of the Magazine, or, still better, by letter to either of us, so that the information may be incorporated in our proposed Catalogue in its proper place; and if such communication can be accompanied by specimens of the gall or insect, or both, we shall feel doubly obliged.

August, 1868.

Observations on the habits and tranformations of Hylesinus crenatus, H. fraxini and H. vittatus.—As the above mentioned species occur plentifully in this district, I have been induced from time to time to make notes of their habits in their earlier stages; which notes, without any claim beyond original observation, may possibly interest others, as they have interested me. I am quite aware that the economy of these insects has been elaborated by both Continental and English authors.

Most Entomologists are, of course, well acquainted with the fact that the perfect insect of the species of Hylesinus forms a burrow or gallery in the cambium layer of the bark of recently fallen trees, along the sides of which the eggs are deposited; the larvæ feeding in the inner bark during the ensuing months, whilst it still retains a modified vitality, and completing their metamorphosis in time to renew the same cycle the ensuing year. They form their burrows transversely to the fibres of the tree, but the species of most of the other genera of the family form them parallel with the fibre. The larvæ, starting at right angles to the parent burrow, form theirs in the reverse direction, or nearly so; their increase in size making them diverge from each other and producing rather a fan-shaped marking.

The two species to which I have directed most attention, Hylesinus crenatus and H. fraxini, are attached to the ash (Fraxinus excelsior). The other species, Hylesinus vittatus, is attached to the elm, and is fairly abundant in this district. It is difficult, however, to say of any species of the Xylophaga whether it be abundant or not; as, however, difficult it may be to find it, when found, it is almost certain to be in some numbers. Thus, though H. crenatus is a somewhat scarce species, I could have taken it last winter in almost unlimited numbers. H. fraxini is, nevertheless, an undoubtedly abundant species. At this season (May 22) it may be found on any recently felled ash timber, busily engaged in oviposition, appearing very decidedly to prefer recently fallen timber to the growing tree, and even attacking wood that has been cut many months. Early in May the perfect beetles

121

re often to be seen swarming about fresh ash logs; they arrive on the wing, referring the warm sunshine of the early morning for their flight, and often ravel considerable distances. They bore very rapidly into the bark. The female commences the gallery by boring obliquely towards the wood, usually in a lightly upward direction, in large timber choosing the deepest part of a crevice of the bark; in younger wood a knot or other irregularity determines the preference, to that, unless the frass lies about the aperture, they are difficult to detect. Smally before the female beetle has quite buried itself in the bark, the male trives, and is waiting to enter the burrow; if not, the female bores down to the rood, and there awaits his coming; and I believe I have met with burrows anomapleted because the male insect did not appear. In a few days the two beetles to be found rapidly extending the gallery in both directions from the aperture of entry, close to the wood and usually slightly in it, and transversely to its fibres.

I suspect each of the beetles excavates a branch, but I have found no means of oserving them at work, as opening the gallery always stops them; and it is ossible that the female does the greater part of the excavation, since I have ways found her further from the aperture of entry when both were in the same canch of the burrow; the male is also oftener at its opening, and eggs are laid ong each as rapidly as it is formed. Not unfrequently the branches of the allery are of very unequal length, so much so that sometimes there is practically aly one branch, possibly both beetles working together. Undoubtedly the greater art of the excavated material is eaten; and I find that in captivity the beetles ill live a long time with fresh ash bark, though without it they soon die. Most sects on their escape from the pupal state contain their eggs ready to be laid and quiring only fertilization, but in these, as in many more active Coleoptera, the gs are developed after attaining the perfect state. In the case of H. frazini the male is often bulkier when the burrow is half completed than on entering it, nd the eggs laid by a single beetle must often exceed in aggregate mass the iginal bulk of the female. The domestic habits and family relations of these etles deserve further attention. The following suggestive experiment was made: burrow was opened, in which some few eggs had been laid; each beetle was then ockaded by a bit of bark in a branch of the burrow, and for each sufficient space as left for air and the discharge of frass. A week after, each beetle had eaten a rrower burrow just long enough to hold it, merely to sustain life, contrasting with e wider burrow outside; but no eggs had been laid.

The eggs are laid along both sides of the burrows, usually at very regular tervals, in little hollows dug out to receive them, leaving the gallery of full size r the beetles within it. They are covered with a gummy material, which soon ts a coating of finer frass. These eggs being laid in rotation, form a good series cobserving the development of the larvæ within the egg, the first being often tehed and the young grub boring into the bark before the last is laid. The eggs id in one burrow vary from 15 to 40 or 50, or even 60 to 100. The gallery finished and the eggs laid in from ten to twenty days. During the ejection of the last, particles adhere by a gummy matter, and form an operculum to the mouth of e burrow, leaving only a minuto opening for frass, which on the completion of e burrow is stopped up. Both beetles then usually die in the burrow; the male always does so. The dead beetles may still be found lying in the burrows ter several years.

122 [October]

I have observed that, when the eggs are hatched (or rather before that time), the young larvæ have their heads towards the bark, in which, during the summer they busily feed. They are straight, white, footless, fleshy grubs, with a distinct head and powerful mandibles, and I have observed them to be hatched about the third week in May. In the autumn they assume the pups state, and shortly afterwards that of the imago. The perfect beetles, however, usually remain during the winter months at the ends of the burrows formed by the larvæ, and emerge in spring to continue their ravages, leaving a very distinct circular aperture; on a sculptured piece of bark all the very obvious holes are apertures of exit, those of entry being obscure.

It often happens that the parent beetles have made their burrows so close together that the supply of bark is quite inadequate to the wants of the larvæ, so that their very abundance is its own remedy, and most of them perish. In other instances the vitality of the bark ceases before the larvæ are full fed, the tree having fallen too long when attacked, so that but a small proportion usually come to maturity.

I have remarked the preference of *H. frazini* for fallen timber, nevertheless it does occur on living trees. On almost any young ash tree I have found marks shewing that a burrow had been formed and a brood perfected, and that the tree in now exfoliating the destroyed bark. Sometimes I think the growth and vigour of the trees appear to have been decidedly checked by them; and, though I have not met with an example, I doubt not that trees are occasionally killed by this beetle. In other instances trees with these marks appear to be uninjured. Where they are injurious, they may be extirpated by cutting down affected trees, stripping off and burning the bark, &c.; but as I suspect that it is the want of dying timber which forces them to attack living trees, I would suggest that placing fresh logs, during the spring months, in the neighbourhood of affected trees, as traps, and destroying the beetles which come to them, would be more effectual.

I have found one tree which owed its fall to the operations of H. crenatus. The beetle had obviously been in possession many years; it had commenced the attack near the foot of the tree, and destroyed the bark round more than half its circumference, and to a height of 15 or 20 feet, the limb above being dead. The portion of bark longest destroyed had fallen away,-the wood beneath being in possession of Sinodendron and Dorcus, and rapidly rotting. The tree was blown over in one of the gales of last winter. I have also found H. crenatus sparingly in several other trees, all pollarded or otherwise sickly. Unlike H. fraxini, H. crenatus takes two years to undergo its transformations, the larvæ assuming the pupal state at the end of the second summer, so that at present full-grown larvæ and perfect beetles are both to be met with. Felled timber would be unable to support this long larval existence. H. crenatus accordingly is never met with except in living trees; and, while an affected tree continues alive, I believe that none of the beetles desert it for another. They economise it as much as possible, the destroyed bark being more completely riddled and devoured by them than by any other beetle of the family I am acquainted with; the burrows of the larvæ are much more irregular also, so that it is impossible to find one of those perfect maps of their voyages (as in H. frazini) which have secured for the Xylophaga as a family the name of "typographers." Last winter the blown down tree I have mentioned 68.)

matained hundreds of the perfect insect ready to emerge on the approach of bring, and but for the fall of the tree would have made their burrows in it again; it now they have all left it, so that last week I had difficulty in finding a becimen. H. frawini, of which odd specimens only were to be found during the inter, now on the contrary abounds in it. The parent galleries of H. crenatus are reportionally much shorter than those of H. frawini, and more frequently consist only one branch, the male and female both entering the burrow as with frawini, but the male usually leaving before the gallery is quite completed. The grae fewer than with frawini, and laid in a deeper cavity, and so thickly covered ith a layer of frass as to require looking for.

H. crenatus appear to be generally distributed in this district, but is hardly sely to prove very destructive; if found to be so, the tree on which it has formed settlement cannot be rescued without a process of barking,—as serious as the wages of the beetle. They are not likely to attack neighbouring trees till driven to fitheir strongholds on the fall of an affected tree, therefore they should be stroyed, or they will establish themselves in others. At the same time I would after a protest against waging war with any species that is to be regarded as larce or local.

H. vittatus attacks fallen elm as H. frazini does the ash; its burrows are norter, and the two branches are very uniformly of equal length, rarely exceeding of an inch long; the number of eggs laid is seldom as many as 20, and, being mally placed more widely apart than those of H. frazini, the burrows of the larve re nearly parallel, giving little of the fan form seen in the burrows of that species appears much less common than H. frazini, though I find their burrows abunutly in a piece of elm fallen about the end of April. The operculum of frass bich closes the mouth of the burrow is more complete than in H. frazini. They emplete their changes in one year. I have been unable to find any evidence their attacking living trees, so that from an economic point of view they must be regarded as very unimportant.

The decay and destruction of fallen timber is much facilitated by these Hylesini all their allies. They partially or wholly destroy the bark; their frass-filled arrows absorb and retain much moisture, which is almost essential to decay, and unally the bark is so much loosened that, after a longer or shorter time, it falls off. his rarely takes place before the wood is much injured by fungi, for which the amped-destroyed bark has been the nidus, and by the various sub-cortical species insects for which the beetle burrows, have opened a way. The wood is then saily attacked by the numerous wood-feeders, various Longicomes, and Anobia, incidendron, &c., which soon complete its destruction. But the necessity for a tutural method of clearing the ground of dead and dying timber has so long ceased this country, that we have difficulty in regarding these insects as other than exists.—T. Algernon Chapman, M.D., Abergavenny, May, 1868.

Live Clytus arietis in Museums.—Lately, when looking over some old numbers our venerable predecessor, "The Entomological Magazine," I was irresistibly minded of the trite maxim that "History repeats itself," by seeing a note of Mr. enny's (at p. 114 of Vol. ii, 1833) on the occurrence of three specimens of Clytus

124

arietis crawling about in one of the cases in his museum on oak brauches upon which stuffed birds were placed. These cases appear to have then been put up for nearly five years, and the last branches put in them were procured three years before the insects were seen, and had been well dried over a stove and in a drying house.

Our readers may remember a similar occurrence of this Clytus in the British Museum, recorded at p. 286 of Vol. iv. of this Magazine, after an interval of 35 years. The beetle may surely adopt "Tempora mutantur, nos haud mutamur in illis" for a motto.—E. C. Rye, 7, Park Field, Putney, S.W.

Curious capture of Lucanus.—Prospecting yesterday for beetles in Wimbledon Park, I found a ? of Lucanus cervus, quite dead, but still moveable as to its limbs, firmly imbedded in an enormous hard white fungus growing at the root of an old dead, dried-up beech-tree. The fungus had imprisoned the beetle so tightly ("Que diable allait-elle faire dans cette Galère?") that, when I opened it (with a knife and difficulty), I found a perfect cast of the outline of the thorax, scutellum, elytra, &c.—ID., 11th September, 1868.

Occurrence in Britain of Apion cerdo.-It is with much pleasure that I find myself able to record the discovery of another species of Apion new to Britain. I is a large species, of the subulate rostrum group, its place being between cracco and subulatum; and, judging from the monograph by M. Wencker of the European species of the genus, I have little hesitation in calling it Apion cerdo, Gerst. It can only be confounded with cracca and subulatum; from the former of which, inde pendently of other characters, it will be readily distinguished by its more entirely black colour, and the fact that in both sexes only the first and second joints of the antennæ are obscurely ferruginous, the other joints being quite black. It has much the appearance of a rather large and robust A. subulatum, but is readily distinguished by the very different structure of the rostrum. Confusion is likely to arise, however from the fact that in subulatum the structure of the rostrum is very different in the two sexes; that organ in the 3 being evidently dilated beneath at the base, and thence gradually narrow to the apex; whilst in the Q it is scarcely dilated at the base, and is longer and thinner than in the &. Comparing the sexes of A. cerd with A. subulatum, I find that the 3 much resembles the Q of that species, but has the rostrum thicker and more evidently dilated underneath; the 2s of the two species are, however, very different, for the Q of A. cerdo, instead of the long thin rostrum of A. subulatum, has its rostrum very broad and dilated at the bas (nearly as much so as in A. cracca), and suddenly constricted at the insertion of the antennæ. I have found both sexes here on Vicia cracca, in the month of July but it appears to be very rare, many visits to the field where I took it having pro duced me only seven specimens. This is not the first time, however, that the insect has been taken in this country, for Mr. Lennon captured an example in som flood refuse at Dumfries, early in the spring of this year. There is also a specime of the Q in Mr. G. R. Crotch's collection, taken by Mr. Wollaston, at Killarney. took a specimen of A. subulatum on a common species of Vicia with yellow flower in the same field where I found the A. cerdo.-D. Sharp, Bellevue, Thornhill Dumfries, September 1st, 1868.

Addition to the list of British Trichoptera (Agrypnia picta, Kolen.).—Mr. Pryer aptured at a gas-lamp at Highgate, in August, a 3 example of this insect, which as submitted to me by my friend Mr. Wormald. It is a North European species 6 considerable size, with the facies of a true Phryganea (in a generic sense), and will be remembered that the species was before erroneously brought forward as ritish, a speciman of Phry. obsoleta having been mistaken for it. There is no doubt, owever, as to Mr. Pryer's insect. Where it may have been bred is uncertain: perhaps we intense heat had dried up the water in its usual haunts, probably at some distance from London, and it was in search of some congenial locality. Trichoptera we been unusually scarce this season, the water in many places where they dinarily abounded having disappeared altogether.—R. McLachlan, Lewisham, th Septembér, 1868.

Sialis fuliginosa in Worcestershire.—I have three specimens of a Sialis which coords very well with the characters of S. fuliginosa given in Mr. McLachlan's British Neuroptera-planipennia."—J. E. FLETCHER, Worcester.

Captures of rare Neuroptera and Trichoptera.—Hemerobius inconspicuus, McLach, a the 25th June last I met with a single example of this species in Addington ark, Surrey. The only locality given by Mr. McLachlan in his excellent "Monoaph of the British Neuroptera-Planipennia" (Trans. Ent. Soc. 1868, pt. 2) is purnementh, where it has been found by Mr. Dale in old furze bushes. My specien was beaten from a fir-tree.

Hemerobius concinnus, Steph. I beat from a fir-tree a fine specimen of this ecies at the same time and place as H. inconspicuus.

Setodes testacea, Curt. When at Llangollen, North Wales, in the second week July, I beat from an alder on the banks of the Dee a single specimen of this ther rare species.

Chimarra marginata, L. I also captured at Llangollen some dozen specimens this local species. I took them by beating alders on the banks of the Dee, and variably where water was running rapidly beneath the bushes.—Percy C. World, 35, Bolton Road, St. John's Wood, N.W.

Notes on the earlier stages of Argynnis Euphrosyne.—The pleasure one always als in striking off another species from the list of desiderata, is in this case greatly hanced by the fact that for some years Euphrosyne eluded the care and search—t of myself only, but of several of my friends.

We never had any difficulty in getting the 2 to lay its eggs, or the young we to begin feeding, but the disappointment lay in the hybernation; we never all get a single larva to feed up in spring, nor could we, with all our searching fit localities, at that season, ever detect a larva feeding at large. However, our empts, though fruitless in one point of view, made us acquainted with the earliest ges, which I will give before proceeding to the full-grown larva.

The egg is of a blunt, conical shape, with its lower surface, which adheres to leaf, flattened, its sides are ribbed; at first it is of a dull greenish-yellow colour, coming afterwards brownish. Towards the end of June the larva is hatched,

then being of a pale greenish tint; after its first moult it becomes browner-green and about the middle of July attaches itself to the stem of the plant, and ceases to feed.

On one occasion I prevented this early beginning of hybernation by keeping a larva in a hot sunny window, and at the end of July I had the satisfaction of seeing it half-an-inch long; it was then black and spiny, with a faint indication of a dul whitish stripe along the sides above the feet, but unluckily, after its hybernation commenced, it was killed by mould settling on it; and up to last spring this was all I had to record.

But on April 1st, 1868, I had the indescribable pleasure of receiving a larva of this species, most kindly presented to me by Mr. W. H. Harwood, of Colchester and which he had found during a walk through a wood; his attention having beef for a moment arrested by a leaf of primrose being much eaten, and, on turning in up, he detected the larva adhering to it.

From its size and appearance being similar to the one above-mentioned, I fel sanguine in having now a chance of observing and rearing a larva to the perfect state. When received it was barely half-an-inch long, covered with spines and black, excepting a stripe formed of whitish freekles running along above the legs but on the thoracic segments only were they so thick as to make the stripe appearance much whiter than on the others.

A very faint edging of greyish rendered visible the black dorsal stripe.

The spines and legs black, and large in proportion; the prolegs of a dar smoky tint, inclining to reddish.

It at first refused to eat when placed on growing plants of dog-violet an primrose, but within twenty-eight hours it moulted; and then when the sun shor on it, its appetite returned. Its pace when walking was very rapid; and sometime it fed for a while on the dog-violet leaves, and sometimes rested quite still, baskin in the sun's rays; when these were withdrawn it retired to the under-side of a lea and there remained, apparently without motion, till the hour (viz., 2 p.m) of the next day which brought the sun round to the window in which its cage was place and then at once it came forth and actively walked about—fed and basked a before. After a few days it began to appear unwell, ceased to feed, remained the earth, and kept out of sight for about four or five days.

Towards evening of April 12th it re-appeared, and rejoiced me greatly behaving itself on the side of its glass cylinder in a new coat of black velvet, orn mented with a sub-dorsal row of bright greenish-yellow spines with black tips as branches, all the other spines being wholly black; the prolegs now appeared depinkish.

By the 16th of April its pale stripe above the legs had become visible, by greyish in tint, the whitest portion being on the third and fourth segments; the whole of the back remaining of a deep velvety-blackness. The greyish-white strip above the legs is formed by a series of whitish spots with black centres, and they are more or less aggregated, so the appearance is whiter or greyer. The anterior legs black; prolegs black, with their tips brownish and semi-transparent the ventral surface brownish-black.

Towards the end of April it attained its full dimensions—about an inch lon and rather thick when in repose, but when stretched out and walking, one inch as .]

narter in length. As it approached its full growth the whitish lateral stripe ame more and more visible, and appeared divided into two by a blackish, rather prupted line, running through it from the fifth to the anal segment: faint wish indications appeared of a sub-dorsal line, especially at the segmental divisions are stretched out, and the black dorsal stripe was also made visible by its edging of wish: the sub-dorsal spines remained greenish-yellow with black tips and notes to the last, the front pair slanting a little over the head; the head itself ok, and beset with short, obtuse black spines; the lateral and sub-spiracular is of branched spines were brownish-black, and all slanted a little backwards.

At the end of the month it seemed rather sluggish, and on May 3rd it diseared amongst the leaves of the dog-violet, which had formed its whole tenance, with, I believe, only one exception, when I saw it eat out a small piece a leaf of primrose.

On May 5th it had changed to a pupa, suspended by the tail to a circular mass ilk spun upon the side of the glass cylinder, hanging about three-quarters of inch fron the earth.

The pupa, five-eighths of an inch in length, was moderately stout and rather rply pointed, and curved at the tip of the abdomen, and with a depression next thorax; the wing-cases long in proportion and dull-brown in tint, with two rows bale greyish dots near their margin; the spiked processes of head and back of tax pale greyish; the back of abdomen brown, with sub-dorsal rows of blackish telets, bordered on each side by a stripe of pinkish-grey, and near the underse of abdomen another such stripe.

The butterfly came forth on the morning of 23rd May .-- WM. BUCKLER, sworth.

A few notes on the new Plusia.—Plusia  $n_i$ , Hübner (first noticed by Engramelle er the name L'ajoutée) is closely allied to our common P. gamma, for a variety which it might easily at first sight be passed over. It also presents some slight ats of resemblance to P. interrogationis, and between these two species it will be to be placed in our lists and cabinets. As it can only be confounded with l man—and then, mind, only at first sight—I have thought it advisable to lay ore our readers some of the more striking points wherein it differs from that dies, which I hope may call attention to its peculiarities, and perhaps lead to the action of other examples in our collections.

Further notes on Plusia ni.—Having captured a specimen of Plusia festuce of the evening of the 13th inst., on flowers of red valerian, in my garden, I again just at dusk on the evening of the 14th, was on the watch for others of the sam species. There were P. gamma, P. chrysitis, and another festuce, which I captured and the Plusia sent to you through our friend Mr. Hellins was captured that sam evening. The flight of festuce is so different from that of gamma, that by carefull watching I can generally distinguish them on the wing, and I captured the strange taking it to be a festuce; for it was then too dark to make out what it really was,

I have since captured and slaughtered some scores of gamma, hoping to meet with another stranger, but no other has yet turned up.

P. festuce must this year have been double-brooded, as I had two in my garde in June.—H. D'ORVILLE, Alphington, near Exeter, August 25th.

Occurrence of Dicrorampha staridorsana, Knaggs, near Exeter.—Two years ag I met with a specimen of the Dicrorampha sent to you by Mr. Hellins, and place it in my cabinet with Petiverella, marked doubtful.

On the 19th June, this year, I beat from the Artemisia absinthium, man plants of which I have in my garden to attract Cucullia absinthii, the same insect and finding it to differ so much from alpinana and Petiverella, thought it was, an find it to be, D. flavidorsana, Knaggs.

As the species was taken by Mr. Meek, in August, and I took mine in June, should infer it to be double-brooded, and I am on the look-out for others, as I knowseveral moths escaped my net in June.—ID.

Abundance of Sphinz convolvuli near Exeter.—I have not seen so many covolvuli since 1859, when I captured 17. Within the last ten days—that is, from the 15th to the present—I have captured 17, good and bad. They are three week earlier than in 1859.—ID.

Sphinz convolvuli at Marlborough.—Two specimens have been taken here; or on the 25th August, on a door in the town, the other about the 31st of August, to Tottenham House.—T. A. Preston, Marlborough College, September 9th, 1868.

Deilephila lineata at Marlborough.—Two children who were playing in stubble-field, about the 26th of August, found a specimen of D. lineata. The took it to a bird-stuffer in the town, who added to the damage done to it by the children by cutting off the tail and stuffing some cotton into the body. Under the circumstances the specimen is not in very good condition.—IBID.

Catocala fraxini at Ipswich.—Mr. J. Balding, of 5, Lyme Road, Ipswich writes:—Sir,—I thought perhaps it might be interesting to some of your entermological readers to know that a specimen of Catocala fraxini was captured of Saturday last at the back of my house.—Extracted from the "Daily News," 264 August.

Occurrence of Catocala frazini and other rarities in Cheshire.—The season of 1868 will be remembered as a remarkably forward one—a season which renders calendars, diaries, &c., comparatively useless, since nearly all insects came out by

re their usual time. Altogether, I think we may consider it a very good season we take as a criterion the occurence of such rarities as A. Lathonio, P. Daplidice, . lineata, D. Barrettii, &c., and the abundance of those generally scarce insects, . Iris, C. Hyale, &c.—indeed, this appears to have been a wonderful season for atterflies. This district, however, is not rich in Diurni, and we have nothing to east of in that respect, but my friend Mr. Wm Lello had the good fortune to meet the fine specimen of C. Edusa, var. Helice, on the Sandhills at Wallasey on the Lth August; this specimen is smaller, and not as dark as those taken in the south. It is very extraordinary that it should have occurred here, since the typical Edusa hardly ever met with in this locality, and has not been seen this year.

On the same day I obtained, by "raking" a sand bank, a wonderful variety of cardui, a description of which I hope to give in the next number.

In this district sugaring was not of much use during the summer months, on second of the wind being generally unfavourable—indeed, we have not had a single wourable evening since the end of August. The ragwort flowers, usually such a ne bait, seemed to have lost their attractiveness, perhaps through the excessive rought.

I have taken several pretty good insects in this district this season, among high I may mention E. unifasciata (1), E. dolobraria (1), A. subsericeata, Eup. ubfulvata, E. fasciaria, C. verampelina (3), T. subtusa, and I have supplied my iends with our noted local insects, such as B. trifolii, M. albicolon, L. litoralis, corticea, E. lichenea, &c.

Of S. sacraria, which I had hoped to take this season, I did not see a single secimen, but my friend, Mr. C. S. Gregson, took a fine one at Wallasey towards see and of July.

My best "take" this season has been a specimen of that great rarity Catocala cavini—unfortunately it is in a very dilapidated state. I took it at sugar in Eastand Wood on the 12th inst., and so little did I expect such an insect on that vening, that when I saw it at a distance I made sure it was a bat, as I had seen several flying about at twilight, and I knew these little animals sometimes indulged the sweet intoxicant so attractive to their prey, the moth.

The same evening Mr. Lello, who was with me, took a fine specimen of X. gilago, a species which has not hitherto been captured in this locality. I dare say should have been more successful had the wind not been N.E.—E. L. RAGONOT, 30, Conway Street, Birkenhead, September 18th.

Note on the ovipositing of Pamphila Sylvanus.—As I was resting awhile on the larger, last July, with a perfect shower of butterflies round me, I had a good protunity of watching a ? P. Sylvanus deposit her eggs. She flew from one stem f grass to another several times, as if she were rather particular in her selection, nd, having found a suitable one, she slid gently down it. The movement was so casily et so quickly done, that I could scarcely see whether it was performed by means of the legs or the wings, but I rather think the former. When she was gone I opened he sheath formed by the leaf round the stem, and found therein about thirty small chite eggs deposited in a line.—Henry Ullyett, Folkestone.

Deilephila lineata at Newport, I. W.—On August 11th I caught a specimen of Deilephila lineata, rather faded, hovering over a bed of geraniums in the twilight; and on the 15th I caught another specimen, very much larger, and of more brilliant colours. Surely it is very uncommon to take two specimens of so rare an insect at so short an interval? From the fact of having also seen lately two specimens of Sphinz convolvuli, and a great abundance of stellatarum, I hope to see some more Hawk-Moth rarities before the season is over.—E. H. MOBERLY, Brixton, Newport, Isle of Wight, 19th August, 1868.

Deilephila lineata in Derbyshire.—Referring to my note in last month's number, a second Derbyshire specimen of D. lineata, taken by Mr. Wood (a gentleman's butler) near Burton-on-Trent, two years ago, has been given to me.—Henry Evans, Darley Abbey, Derby, September 2nd, 1868.

Abundance of Colias Hyale in 1868.—Among the notices of Lepidoptera in the September No. of the Entomologist's Magazine, I observe more than one on the capture of Colias Hyale in some abundance at Colchester, Gravesend, and near Ramsgate. As it will probably be found that this species has been unusually abundant in many other localities, I think it may prove scientifically useful if all such appearances are recorded. I therefore add that a week ago I observed C. Hyale in great numbers near Cromer, in Norfolk. I could have captured dozens, but only took an example to convince my friends that I was not mistaken in the species. All that I saw were in fields bordering the cliffs to the west of Cromer, I did not observe one on the eastern cliffs. I may add that Pyrameis cardui was to be seen in every locality within six or eight miles of Cromer; in fact it was the most abundant butterfly at that time on the wing.—Frederick Smith, British Museum, Ist September, 1868.

Colias Hyale and Sphinz convolvuli at Haslemere.—Hyale has appeared here; I have taken a lovely set, but it is not numerous. Sphinz convolvuli has also been found.—C. S. Barrett, Haslemere, 22nd August, 1868.

Heliothis peltigera at Exeter.—H. peltigera has again occurred here this season, but only one or two specimens have been captured.—J. Hellins, Exeter.

Capture of A. Atropos on the wing.—A friend of mine, Mr. Basil P. Fielding, came to me this morning to show me a moth which had entered at the window of a brightly lighted room near Reigate, last night. The specimen, successfully preserved in a bottle, where, I must say, it looked anything but comfortable, proved on examination to be a fine A. Atropos. Misgivings evidently possessed my friend's mind as to the next step to be taken in dealing with his unwieldy capture, and he frankly offered to entrust me with the task of its destruction. Scarcely had I touched it with the solution of oxalic acid when the loud squeak, which sounded very like a remonstrance, became audible: and the strange sound was continued with unusual distinctness until the powerful poison had done its work.—J. B. Blackburn Grassmeade, Wandsworth, 7th September, 1868.

Occurrence of Argynnis Lathonia at Folkestone.—On the 7th inst. I had the good fortune to capture a large female of this species in the Warren here.—W. PURDET Folkestone, Sept. 14th, 1868.

Another capture of Argynnis Lathonia at Colchester.—Since I last wrote I have I the pleasure of taking another beautiful specimen of A. Lathonia, and have also t with Spilodes sticticalis, and a few pupe of Cymatophora ocularis.—W. H. Harod, St. Peter's, Colchester, 16th September, 1868.

8.1

Abnormal brood of E. russula.—Some of the larvæ from a batch of eggs of this cet, sent to me in the third week of last June, fed up with marvellous rapidity. By of them assumed the pupal state early in August, and the first image erged on the 15th of that month. This species usually passes the winter in the m of a small larva, and feeds up in the next spring.—Mrs. Hutchinson, Grantsd, Leominster, September, 1868.

Occurrence of Euperia fulvago in Scotland.—About the end of last July I found pecimen of this handsome moth on the flowers of Erica tetralia; and subsently, by working hard, took a few more on the flowers of the same plant and of luna vulgaris. Two specimens also came to "sugar." This species, which ms to be very local in England, is, I believe, unrecorded hitherto as Scottish.—BUCHANAN WHITE, M.D., Achilty, Rosshire, September, 1868.

New locality for Scoparia angustea, Steph.; &c.—During the past week I have twith this species at Folkestone, where it appeared to be by no means uncomn; but, believing the locality to be new, think the occurrence should be recorded. The properties of the stephen and that I also found several larvæ of Sericoris euphorbiana in the closed ds of Euphorbia amygdaloides, and that a female Galleria mellonella made its prearance in the house.—Howard Vaughan, Kentish Town, 11th September, 1868

Cerostoma scabrella near Croydon.—During a short stay at Croydon, last July, as lucky enough to meet with three specimens of Cerostoma scabrella, on an old ce in the vicinity of Croham Hurst.—James L. Courtice, Camden Town, N.W., stember 3rd.

Occurrence of a Scoparia (Sc. Zelleri, Wocke) new to Britain.—One evening in y, my friend Mr. Horton captured here, in my dining-room, a fine example of a paria, as large as, or even larger than, Sc. cembrw, but grey in tint, like Sc. bigualis. Dr. Knaggs informs me that it is identical with specimens in his usession received from Dr. Standinger, under the above name.—George J. Arder, Joint Counties' Asylum, Carmarthen, August 27th.

Scoparia Zelleri at Norwood.—A second example of this species was left with for determination some time since. It was taken at Norwood by Mr. Pryor o will perhaps, when this meets his eye, favour us with an account of its capture. H. Guard Knaggs, September 18th, 1868.

The larva of Abraxas grossulariata distasteful to frogs.—At a recent meeting of Entomological Society, when the question of the distasteful nature of certain ects and their larvæ was being discussed, I mentioned that three individuals of green lizard formerly in my possession had always shown a particular aversion certain caterpillars. Amongst those invariably rejected I especially noticed A. asulariata; this, too, seemed particularly strange, inasmuch as they never refused devour the perfect insect of the same species.

132 (October

Yesterday I had the pleasure of observing the same fact in the case of tw frogs which I now keep in my old lizard-house to destroy slugs, woodlice, spider &c.,—all of which they swallow with the greatest avidity.

When they first became aware of the introduction of the caterpillars of grossulariata, they seemed greatly excited, sprung forwards, and licked there agerly into their mouths; no sooner, however, had they done so, than they seeme to become aware of the mistake that they had made, and sat with gaping mouth rolling their tongues about, until they had got quit of the nauseous morsels, which seemed perfectly uninjured, and walked off as briskly as ever.

After this, it was useless to attempt to persuade the frogs to touch one these caterpillars.—Arthur G. Butler, British Museum, May 18th, 1868.

P.S.—Since writing the above I have tried other larvæ from gooseberry, wit exactly the same result; such as those of the gooseberry saw-fly, and of Hall vauaria. May it not be possible that the plant transmits some peculiar acid to the larvæ which feed upon it, such as to cause their rejection as food by small reptile &c.?—A. G. B., 3rd July, 1868.

Notes on gall insects.-There exists in the library of the Museum at Basle a octavo volume, presented in 1854 by Professor Wackermagel, which contains nicely-arranged series of insect productions, such as mines, galls, distorted shoot cut leaves, &c., of various Swiss plants. Years ago it was my great delight study the numerous biological lessons of this volume, but time and change residence had almost obliterated my recollection of its contents, until, on a recei visit, my attention was recalled to it through the courtesy of Professor Peter Herian. Acting on the maxim that "repetitio mater studiorum est," I perused carefully. Memoranda made on the spot and specimens compared since my retu to England, enable me now to add another link to the solution of two of the querie I advanced in the May No. of the "Zoologist" (p. 1201). I there called attention to tubular galls on the upper-side of beech leaves (West Wickham) covered with reddish pubescence, &c. These will have to be referred to Cecidomyia annulipe Hartig, or to a closely allied species. Mention was also made (Zool., p. 1201) discoloured and rolled leaflets of the common Bracken (Allonby, Cumberland), which I can now ascribe to a Haltica.

It rests with successful breeders to verify these surmises.

In the same volume, my eye was struck by a leaf of Quercus pedunculat bearing on its upper surface numerous spangles of Neuroterus Malpighii, Harti This display of instinct at fault is of rare occurrence with the insect named, so fi as I know, but I shall be glad to hear what other observers have to say. My oth memoranda must be left for some future time, but a thought suggested by the handling of the said collection, in which Bremi's name occurs in almost every pagmay fitly close this notice.

It is to be hoped that the valuable legacy of unpublished biological essays be this naturalist, preserved in another Swiss library, at Zurich, will soon be mad accessible, in some way or other, to the entomological public. No one can loo over the list of these papers in Dr. Hagen's laborious "Bibliotheca Entomologica without forming some such expectation. When will it be realized?—Albert Müller, Penge, S.E., August 11th, 1868.

# DESCRIPTION OF A NEW SPECIES OF THYAMIS. BY E. C. RYE.

8.1

Amongst a series of most of the then known British Halticidæ, sent November, 1863, by Mr. G. R. Waterhouse to Herr Kutschera of enna (and recently returned with certain remarks, of which a notice m the pen of the former gentleman will appear in our next Number), s an example of a large species of Thyamis, taken, as far as I am are, only by myself,\*—which Herr Kutschera considers to be distinct d undescribed. I, accordingly, characterize it as follows:—

#### THYAMIS AGILIS, n. s.

Alata, ovata, convexa, nitida; luridè testacea, oculis nigris, subtus picea, antennarum femorumque posticorum latè apicibus piceis; thorace evidenter punctulato; elytris confusè, sat fortiter, minus confertim punctatis, humeris vix prominulis, apice singulatim sub-rotundatis; tibiis posticis calcari brevissimo, crassiusculo, instructis.

Var. capite elytrorumque suturá vel rufescentibus vel picescentibus, tibiarum tursorumque apicibus picescentibus.

Long. corp.  $1\frac{1}{6}$ — $1\frac{1}{3}$  lin. (Anglic.).

I captured about a dozen specimens of this conspicuous insect in ptember, 1863, by sweeping in Headley Lane, Mickleham; but have osequently only found one other example, in the same place.

It is about the size of *T. jacobææ*, Waterhouse (tabida, Auct.), ich, however, it exceeds in comparative width; but it is most closely ied to *T. tabida*, Fab., Waterh. (verbasci, Auct.), which it resembles by much in appearance and structure. Compared with that insect, is considerably smaller, the largest example of it being rather less in the smallest verbasci; its colour is not so light; its thorax is more dently and its elytra more strongly and less closely punctured; the cond and third joints of its antennæ are equal in length, instead of a third being rather longer than the second; and the spur terminating a posterior tibiæ is very much shorter and scarcely perceptibly curved.

The smallest examples, which are about equivalent in size to large eximens of *T. melanocephala*, may readily be known from that species their less defined colouration, wider and less acuminate elytra—ich are more shining, owing to their wider punctuation—stouter anmæ, light posterior tibiæ, &c.

The testaceous Halticidx are so liable to get discoloured after ath, that it is extremely difficult to define their exact tints. The htest in colour of my specimens has the five apical joints of the an-

Dr. Power appears to have two very old specimens of this insect in his collection, taken at "Gog ogs," Cambridge. One of my Mickleham examples, given to him by me, has been sent by him to M. rd, who has returned it as verbasci, var., having apparently failed to perceive the structural differs between the two insects.—E. C. R.

tennæ and the upper apical portion of the posterior femora pitchy-bla k, and the suture very slightly rufescent; whilst in the darkest, the antennæ, head, posterior femora almost entirely and anterior and middle femora slightly, apex of all the tibiæ and tarsi, and the suture (especially behind), are pitchy. This darkness, however, I suspect must principally be attributed to a mere suffusion of fluids in drying after death.

7, Park Field, Putney, S.W.: 14th October, 1868.

ON THE ABUNDANCE OF CERTAIN INSECTS IN CERTAIN YEARS. BY B. C. B. JORDAN, M.D.

It was formerly a favourite hypothesis with me that either the egg or pupæ of some insects lay dormant until a favourable season for their development; but I am growing more and more weaned from this ide yearly. I do not wish to deny that the pupæ of Eriogaster lanestris for example, may pass over a year when February and March an unusually bleak, but this latent state is not the reason for the periodi abundance of certain insects. Every moth lays a vast number of eggs and generally the greater number of these perish before arriving a maturity, the usual time for such destruction is probably the very youn stage of larval life, and a heavy rain about that period may cause great mortality; in some years all circumstances prove favourable, and th usually rare insect becomes abundant. Some lepidopterous insects are peculiarly subject to this periodic plenty, such as Colias Hyale an Edusa (both I believe always abundant on the continent), Sphinx convo vuli, Agrotis saucia, insects of the genus Heliothis, and many other These remarks have occurred to me "in populous city pent," and wit too much work to touch entomology for the season, from the unusu abundance of two insects in the streets of this town. They have been Chrysopa perla and Coccinella septempunctata. Of the former I counte more than twenty on each of two consecutive lamps one night, ar every other lamp seemed to have an equal number; as for the latte they have been so plentiful that I have seen children of ten collecting them from the walls in little baskets and paper bags. Now it is we known that the larvæ of these two insects are subject to very similar conditions as far as regards the general "struggle for existence," wide different as the perfect states may be. These few remarks are given the hope that some interesting observations may be drawn out fro entomologists as to their experiences during the very peculiar at almost tropical summer through which we have just passed. Syrph pyrastri has been only a little more plentiful than usual.

<sup>35,</sup> Harborne Road, Birmingham: Sept. 12th, 1868.

LIST OF CAPTURES OF HEMIPTERA IN PALESTINE AND SYRIA; TOGETHER WITH DESCRIPTIONS OF SEVERAL NEW SPECIES.

BY J. W. DOUGLAS AND JOHN SCOTT.

(Concluded from page 118.)

# FAMILY LYGIDÆ, Genus Camptobrochis, Fieb.

37.—CAMPTOBROCHIS SERENUS, Doug. & Scott.

- Q. Cinereus, nitidus; capite ochraceo, linea media necnon margine nostico stramineis. Antennis nigris articulis primo et secundo medio rrunneis aut rufis; pronoto nigro, margine antica maculaque conjuncta sallide stramineis; scutello nigro, apice pallide stramineo; clavo griseorrunneo, apice piceo-nigro; corio cinereo, postice fascia lata picea; cunso pice late piceo-nigro; membrana pallida, nervis brunneis; pedibus ruforunneis.

  Long. 1½ lin.

  Lon
- ç. Greyish-white, shining, with remote black punctures, those n the pronotum deeper than those on the corium. Thighs not banded.

[ead brownish-yellow. Crown with a pale yellow central streak, posterior margin pale yellow, widest in the centre. Face, central lobe with a pale yellow central streak. Antennæ, 1st joint red, base and apex narrowly pitchy-black; 2nd, 3rd, and 4th pitchy-black, 2nd with a broad brown band in the middle. Eyes pitchy-brown. Rostrum brownish-yellow, apex piceous.

horax-pronotum black, collar and a triangular spot behind it, separated by a narrow transverse black line, pale yellowish-white; lateral margins broadly brownish-grey, widest at the posterior margin, the latter narrowly pale yellow, disc convex, callosities not punctured. Scutellum raised above the clavus, black, convex, sparingly punctured in the centre, sides and a diamond shaped patch at the apex pale yellowish-white. Elytra, clavus pale brownish-grey, inner margin narrowly, as far as the scutellar angle, pitchy-black, from the latter to the apex a narrow triangular patch, pitchy-black. Corium, extreme anterior margin piceous, posteriorly with a broad piceous band, its posterior margin lunate, its anterior margin with a tooth in the middle, extending for some little distance along the centre of the disc. Cuneus punctured, apex broadly pitchy-black. Membrane pale, iridescent, cell nerves brown, at the apex broadly margined with brown interiorly. Sternum-Prosternum xyphus and inner margin pale yellowish-white, sides black, punctured. Mesosternum piceous, punctured exteriorly, margined with pale yellowish-white. Metasterman piceous. Legs reddish-brown. Thighs red-brown, paler towards and at the apex. Tibiæ yellowish; 1st pair, from the base a brown streak extends about half-way down their length, apex brown; 2nd pair, at the base with a brown streak on the outside, terminating in a half-band, apex brown; 3rd with a broad band in the middle and the apex brown. Tarsi and claws piceous.

Abdomen—underneath piceous, sparingly clothed with fine, depressed yellowish hairs.

Described from a single of example taken near Baalbec in May.

## FAMILY STIPHROSOMIDÆ.

Genus Stiphrosoma, Fieb.

38.—STIPHROSOMA AMABILIS, Doug. & Scott.

Q. Nigro rubroque varia, nitida, pilis brevibus, erectis, dense vestita; antennis piceis, articulo primo rubro, secundo stramineo apice nigro; capite, pronoto scutelloque rubris; elytrorum clavo nigro; corio nigro, margine antico rubro; cuneo rubro, apice piceo; sterno rubro, metasterni marginibus lateralibus nigris; pedibus rufis, tibiis stramineis basi rufis.

Long. 21 lin.

Q. Black and red, shining, thickly clothed with short, erect,

black and red, shining, thickly clothed with short, erect, black hairs. The junctions of the corium and cuneus, and cuneus and membrane, deeply notched.

Head red. Antenna-1st joint red, 2nd yellow, apical third black, 3rd and 4th piceous. Eyes black. Rostrum brownish-red, base slightly and apex piceous.

Thorax—Pronotum red, punctured, somewhat crenate—punctate towards and at the posterior margin, callosities separated by an ➤-shaped depression, deepest in the centre. Scutellum red, convex, raised above the clavus, wrinkled transversely. Elytra finely crenate—punctate longer than the abdomen, considerably deflected from the apex of the claval suture. Clavus convex, black. Corium black, anterior margin reflexed, red, broadest at the base. Cuneus red, rounded at the base, leaving a notch next the corium, extreme apex piceous. Membrane pitchy-black, cell nerves black, between the apex of the cuneus and the cell nerves a white vanishing streak. Sternum shining. Pro and Mesosternum red. Metasternum black on the sides. Legs red, clothed with longish, depressed, pale hairs. Tibiæ yellow, base reddish, at intervals with a few stoutish, black hairs. Tarsi piceous, 1st joint yellow. Claws black.

Abdomen—underneath black, shining, clothed with fine, erect, black hairs; last genital segment red. In certain lights the hairs have a yellowish appearance.

A single ? example taken at Hebron in April.

Section REDUVINA.

FAMILY EMESIDÆ.

Genus EMESA, Fab.

39.-EMESA DOHRNI, Doug. & Scott.

Supra flavescenti-brunnea, subtus fusco-brunnea; capite linea longitudinali fusca oculis interrupta ornata; antennis longis, pallide fuscis; pronoto linea media angustá rufo-brunnea; elytris dilute ochraceis, abdomine dimidio paullo longioribus, nitidis, diaphanis, punctis atomisque fuscis, cellula icali sub-rhomboidali, fusco-marginata; pedibus testaceis, tibiis anticis neis maculisque fuscis, necnon ante medium dente longo instructis. Long. 6 lin.

Linear, subcylindric, pale yellowish-brown.

ad—divided into two almost equal portions by a deep curved channel between the eyes; viewed from above the anterior portion has its sides parallel, the posterior portion somewhat arcuate and tapering towards the thorax, with a very narrow central line and a broader one on each side extending almost to the posterior margin; viewed from the side ovate, sub-rhomboidal, with a fuscous line throughout its entire length, interrupted by the eye. Antenne very long, filiform, pale fuscous. Eyes small but prominent, shining, deep pitchyblack.

orax-Pronotum-anterior margin concave, produced on the sides, side margins constricted towards and at the collar; disc with a fine brownish-red central line extending over the collar. Mesonotum-sides divergent, with a distinct margin widest at the apex. Scutellum minute, basal angles rounded. Elytra a little more than one-half the length of the abdomen, nervures strong; base, anterior and interior margins as far as the nerve, pale yellowish and somewhat shagreened; disc whitish, almost diaphanous, shining, somewhat iridescent, with a row of fuscous spots next the inner marginal nerve, and one or two spots, parallel with the other row, nearer the middle of the disc; longitudinal nerves on the inside and the nerve at the apex enclosing a rhomboidal cell, margined on both sides with fuscous. Sternum yellowish-brown, more or less mottled with fuscous-brown. Legs pale yellowish-brown. Thighs-1st pair on the outside with large, irregular, fuscous-brown patches. Tibiæ with irregular, diagonal, fuscous-brown streaks and spots more or less confluent, 1st pair on the under-side before the middle with a long tooth, and between it and the apex a double row of short teeth, with, at intervals of about every fifth tooth, a longer one, the short teeth entirely and the apex of the others black. Tarsi with a brown band at the apex. Claw reaches to the long tooth, apical half pitchy-brown. Tarsi of the 2nd and 3rd pairs at the apex and the claws piceous.

\*domen—above fuscous-yellow, with a narrow red central line and one down each side next the connexivum, between the central and side lines an interrupted fuscous line, penultimate segment slightly green; underneath fuscous-brown, clothed with minute yellow hairs, central line pale, connexivum margin pale brownish-yellow, base and apex of the segments, and five or six oblong spots of various sizes, placed at irregular intervals, fuscous-brown, at the junctions of the segments a small, round, shining, fuscous wart.

We have much pleasure in naming this insect after Dr. A. Dohrn, e author of the admirable monograph of the Family, which was pubhed in the Linnæa Entomologica, vol. xiv.

The description has been drawn up from a single specimen, taken April amongst water weeds on the edge of the stream running from isha's Fountain. 138 [November,

#### FAMILY REDUVIIDÆ.

Genus Lochus, Doug. & Scott.

Corpus ovatum, breve. Caput pronoti longitudine, medio latissimum, partibus ante-oculari et post-oculari æque longis; inter oculus linea profunda impressum, postice nodiformi, inter antennas tuberculis duobus minutis instructum. Antennæ articulo primo capite paullo breviori, basi lobo pendente instructo. Rostrum crassum, curvatum, inter coxas anticas extensum, articulo ultimo longissimo. Pronotum breve, transversum, longitudinaliter valde convexum, margine anteriori carinato. Scutellum breve, transversum, depressum, postice rotundatum. (Elytra brevissima: alæ nullæ). Pedes—femoribus anticis incrassatis, femoribus tibiisque posticis valde elongatis tarsis omnibus curvatis, articulis primo et secundo brevissimis, ultimo valde elongato. Abdomen latum, ovatum, supra valde concavum, infra convexum, connexivo lato, margine serrato.

Head almost as long as the pronotum, hindwardly a little and gradually narrowed, but not produced into a neck, anteriorly the sides are sub-parallel, the widest part is across the eyes, which are equidistant from the base and front of the crown, between them a deep linear impression produced forwardly in the middle, posterior to which the crown is raised into a node. Face decumbent. Antennæ short, each set on a stout, obtuse tubercle; 1st joint stoutest, rather shorter than the crown, curved, scarcely clavate; 2nd a trifle longer than the 1st, 3rd and 4th filiform, the 2nd, 3rd, and 4th with fine, projecting hairs: from the base of the tubercle a swollen, free, lobe-like protuberance hangs over the sides of the face: between the antennæ two small tubercles. Eyes small but prominent. Ocelli posterior to the eyes, on each side of the basal node. Rostrum stout, curved, reaching to between the anterior coxa; 1st and 2nd joints very short, 3rd longer than the 1st and 2nd together; 4th longest.

Thorax—Pronotum short, transverse, longitudinally very convex, anterior margine carinate. Scutellum short, transverse, flat, rounded behind, the margins slightly reflexed (Elytra rudimentary: Wings wanting). Legs—1st and 2nd pairs in length moderate, thighs (of the 1st pair especially) incrassated; 3rd pair, thighs and tibiæ thinner, both one-half longer than the 2nd pair; all the tibiæ with fine, short, projecting hairs: tarsi—1st and 2nd joints very short, 3rd nearly three times the length of the 1st and 2nd together.

bdomen very broad, oval, above concave, but raised along the dorsal line; connexivum broad, the margin obtusely serrate; under-side convex.

#### 43.—Lochus squalidus, Doug. & Scott.

Niger, impunctatus; nodo verticis et appendicibus antennarum bruneis; abdomine supra lividi-brunneo, lineis brevibus transversis angulisque esticis seqmentorum connexivi late nigris.

Long. 5½ lin.

Black, except the abdomen, without punctures.

ead—the posterior node obscurely, and the lobes attached to the antennæ light brown.

bdomen—above, livid testaceous-brown, on the posterior margin of each segment on each side of the raised middle a black spot, and two short black linear marks on each segment towards the connexivum; and on the latter the posterior outer angle of each segment has a large triangular black spot.

The whole insect is so thickly clothed with closely-adhering grains is sandy matter, which is extremely difficult to remove, that the colour ad markings cannot be given more accurately than above. From its arthy investiture it may be presumed that this insect lies hidden in a soil waiting for its prey; and it is equally easy to believe that its ang posterior legs enable it to spring upon its victims.

A single specimen ( $\mathfrak{P}$ ), only, taken on the plains of Jordan by weeping low plants in April.

Lee, S.E., 1868.

68.

Occurrence in Morayshire of an Elater new to the British lists.—In the beginning June last I had the pleasure of capturing, on the banks of the Findhorn, Moraystire, two specimens of a Cryptohypnus which differed from any species of that enus with which I was acquainted. Knowing that Dr. Sharp possessed types of the European species, I sent these specimens to him for determination, and he forms me that they are, in his opinion, to be referred to C. pulchellus, Linn. hough given as British by Stephens, in his Manual, that species does not seem to be in his, or in any other, indigenous collection, as it has been omitted from all the absequently published Catalogues. Indeed, Stephens' description does not pply to the insect in question, which is about the size of C. 4-pustulatus, with selytra not deeply punctate-striate with their interstices slightly raised, but seeply sulcate at the base, after the fashion of C. sabulicola, Thoms., recently perorded by Dr. Sharp in this Magazine.—R. Hislop, Blair Bank, Falkirk, 15th etober, 1868.

Note on the habits of Sinodendron cylindricum during oriposition, &c.—In former mmunications I mentioned an old ash-tree as destroyed by Hylesinus crenatus, ad containing Sinodendron cylindricum in the rotten wood, both in the larval and

140 [Novemb

imago states. In March last I cut off from this tree all parts then harbouring t latter insect,-leaving, however, plenty of wood unattacked, and in this I ha since been observing Sinodendron depositing its eggs. On May 23rd I found to burrows, easily detected by the heaps of frass outside, each containing a pair of t beetle,-which, as I left none in or about the tree, were, of course, bred elsewhere The burrows entered the exposed rotten wood for a short distance at right angle with the surface, and then turned upwards along the fibres of the wood; the were three or four inches long, and wider in places, as if for "shunting." In the and other burrows found afterwards, before any eggs were laid, the female beet was always at the side of the burrow with her head at its extremity, as if co tinuing the excavation, and the male always had his head directed towards t opening and often close to it,-the remarkably flat front of his thorax nicely fitting the burrow, and with sawdust sticking to it, as if it were used for pushing out frag It is not unlikely that the supposed shunting-places may have been eaten out 1 the male for nourishment. On the same day I found a solitary 2, who had on burrowed her own length into the wood. I replaced her in an artificial burro made with the knife (after examining burrows, I usually replaced the beetles in the way, but doubt not that my proceedings disturbed them very much). The ne day there was a 3 also in this burrow, and on the 25th I found this pair in cop. the top of a burrow about three inches deep. On the 24th there was a burro containing a solitary &, just as that of the 23rd contained a solitary 2, and, 1 the next day, this burrow contained a pair of beetles, the Q, as usual, furthest if In opening the burrow I destroyed the & of this pair, but on the 28th, two da after, there was another male in the burrow. On the 31st there was a 2 only this burrow, which I accidentally killed: no eggs had been laid.

On two other occasions I found burrows commenced by males only; but n proceedings so disturbed them that they were gone the next day. I believe the normal length of burrow to be four to six inches, but my opening them so often made some of them burrow twelve or eighteen inches. On June 11th I open the burrow commenced May 23rd by the solitary Q, and found the extremity the burrow for about three-quarters of an inch tightly packed with frass or sawdus in which were four eggs. The 3 beetle had backed close up against the extremit and the Q was busily excavating a new branch of the burrow, which left the other just in front of the &. On June 23rd I opened another burrow, in which found only a Q, excavating a branch. In another was about three-quarters of a inch of tightly packed frass containing nine eggs; in a third, a smaller quantity frass with one egg. Probably in both of these cases the Q was bringing sawdu from the new branch of the burrow to put into the one in which oviposition we going on. It appears that the galleries are always excavated by two beetles, ar that they meet first after the burrow is commenced; but what seems somewhile remarkable to me is, that the burrow is commenced indifferently by either the or Q beetle. The & usually, I suspect, when undisturbed, remains until or

In a rotten ash-log, just attacked by Sinodendron, I have subsequently four several burrows which enable me to supplement my observations. One of the burrows was a very fine one, about six inches long, besides branches packed wit cggs, of which I was able to examine two carefully. These branches were east

[68.]

bout two inches in length, the upper one containing at least twenty eggs, laid ith great regularity in spiral lines round the sides of the chamber, each against a ight depression in the rotten wall, about one-eighth of an inch from its neighbour, and carefully packed round with frass. The centre of this branch contained only ass, and no eggs, and its entrance from the main burrow was packed with frass or about three-sixteenths of an inch, as a plug or stopper. The lower branch contained twenty or thirty larvæ, which had been hatched for several days, and had been on the plant of their bed of frass, the \$\frac{1}{2}\$ beetle, still alive, occupied the main burrow, but the \$\frac{1}{2}\$ was not to be found.

Sinodendron evidently only attacks wood that is really rotten. I have found

boring into poplar and beech, as well as ash.

The eggs are white and opaque, ovoid in form, one-twelfth of an inch in length, and one-twentieth in diameter.—T. ALGERNON CHAPMAN, Abergavenny, July, 1868.

Dytiscus lapponicus in Ireland.—I have pleasure in recording the capture, for ne first time, of Dytiscus lapponicus in the "Emerald Isle." During last August spent several days in the "Wilds of Donegal," where a combination of scenery, in the one hand of the wildest grandeur, and on the other of the bleakest desolation, may be found, perhaps unmatched in the three kingdoms. The possibility of adding a slug (not a Limax) in one's hat seems very much to have prevented curists and even naturalists from visiting its romantic cliffs. After a drought of the months I was not surprised to find insects of all kinds scarce. There is no port of country which is so much injured entomologically by long want of rain as receives moorland and mountain-side. The very peat-holes, the loved abode of lydropori, were dried up. During my visit, however, the weather broke, and, oh!

The loughs and tarns of Donegal are innumerable, but nearly all are so tocked with trout, that beetles have a hard lot. Having searched several tarns rithout success, I ceased to expect anything; but happening to pass a small one one which no stream seemed to issue, I gave a passing look (having no net at the me) for any signs of entomological life. My surprise was great when, at the first lance, a Dytiscus came paddling towards me, and was at once recognised as laponicus. He was speedily secured with the hand (for he was quite unsophisticated), and a regular hunt commenced. I was rewarded ere long with a good number.

Next day, through a perfect "tempest torrent whirlwind" of the elements, I sturned with my net, and, amidst the solitude broken only by the hiss of the wind long the mountain side, the rattle of the rain-drops on the surface of the water, and the roar of the Atlantic on the cliffs below, I spent several hours hunting, ong up to the knees in water. Success, however, sweetened all disagreeablos.

I was much struck by the very close resemblance between the appearance of appronicus, while at rest at the bottom, and the half-withered leaves of Potatogeton natans. The yellow strise on the clytra of the freshly emerged males lamost exactly mimic the venation of the leaf. Doubtless this has frequently saved them from the attack of herons and gulls.

As I once before noticed (Ent. Monthly Mag., March, 1868), the females were ery much less numerous than the males, being in the proportion of 1 to 5. The matter than the properties I observed in the tarn were Acilius sulcatus, Gyrinus natator and it minutus: the last was very abundant.

142 [Novemb

In one of the neighbouring peat-holes, further up the mountain, I was a tonished at finding *Dytiscus marginalis*, which, beside his boreal brother, look gigantic. Along with him were several of the common *Agabi* and *Hydropori*.

On the slopes of the same hill I took Tarus vaporariorum, Synuchus nival Treclus obtusus, Calathus micropterus, and Otiorhynchus monticola; the last me tioned, along with Olisthopus rotundatus, occurs on the very summit of high hill and also on the sea-shore. I suppose we must account for this in the same way for the similar occurrence of Armeria maritima and Silene maritima.

I may perhaps mention, for the benefit of those of other tastes, that the attractions of Donegal are multifarious. Of ferns, Osmunda regalis is a commone, growing in great luxuriance, sometimes in clumps 20 feet in circumferent and 5 or 6 feet high. In the sea caves the fronds of Asplenium marinum attast the extraordinary length of 2 feet, and show some fine varieties. The rocks mountain limestone are literally packed full of fossils; while round the clithe chough, with its glossy black wing and red bill and feet, flies in flights, with an occasional sea-eagle, peregrine, and raven.—J. E. Somerville, 11, South Par Terrace, Glasgow.

Deleaster dichrous in Scotland.—I took a specimen of this insect in the b ginning of June, flying at the entrance to the West-End Park of our city. This rather a northern locality for it, though it has been recorded before in Scotland, believe.—ID.

Occurrence of Apion cerdo near Newcastle-on-Tyne.—This fine Apion has bee taken sparingly in three widely separated localities in this district. I have, in u collection, specimens from Gibside, Gosforth, and Bothall, all taken on Vicia crace in July. These examples were taken many years ago, and I have often swept the same insect since, but, looking upon it as merely A. cracex, it was general allowed to escape. I have also noticed it to occur about Lanercost, in East Cur berland.—Thos. Jno. Bold. Long Benton, Newcastle-on-Tyne, October 7th, 1868.

Occurrence in Yorkshire of Phalacrus substriatus.—During the last week July and the first week in August last, I met with this somewhat local beetle one of our moor bogs, in some abundance, frequenting the flowers of the commt Bog Asphodel, Narthecium ossifragum. Though widely distributed and abundan when it does occur, the insect seems by no means generally common.—T. WILKINSO 6, Cliff Bridge Terrace, Scarborough, September 14th, 1868.

Occurrence of Pseudopsis sulcatus at Scarborough.—My friend, Mr. Lawson, an I took a fine series of this interesting species, by sifting the refuse at the bottom of haystacks, in the months of January, February, and March last. It is a mowretched creature to detect; as it lies so long on the sifting-sheet before it wowe. We found it in various localities in the neighbourhood.—ID.

Capture of Sigara minutissima, Fab.—It may be interesting to some of the readers of the Entomologist's Monthly Magazine to know that this somewhat loc species has turned up here in some plenty, towards the end of June and the biginning of July, in Scalby Beck, amongst Confervæ. The only recorded localitie that I know of, for it, are by Mr. G. R. Crotch, in the Cambridge Fens.—ID.

Capture of Atomaria ferruginea and A. fimetarii in Yorkshire.—During the month fay, 1867, I captured a fine series of A. ferruginea, by shaking moss at the roots sh-trees, in a very damp part of one of our woods. I had the satisfaction of n finding it the other day in the same place, in some plenty. There are no 'nests, either in the trees or in the ground, near where I found the Atomaria. he same neighbourhood, in May, 1867, I had the good fortune to take a fine upple of Atomaria fimetarii.—In.

Occurrence of Potaminus substriatus near Scarborough.—I have taken this very resting and local species in Scalby Beck, scantily, from January last up to the cent time, amongst moss growing on a timber waterfall, also on submerged so of wood, accompanied by Elmis Volkmari, parallelopipedus, and æneus, and rema pulchella.—Robert Lawson, 58, St. Thomas Street, Scarborough, October 4, 1868.

Query respecting Bedeguar galls.—There being reasons for supposing that other s (especially cultivated varieties) besides the dog-rose, sweetbriar, and Rosa ossissima, are infested with "Bedeguars" in this country, any information or nenticated specimens, throwing light on this subject, would be very acceptable in. I particularly wish to ascertain if grafts of the moss-rose have ever been and thus diseased.—Albert Muller, 2, Camden Villas, Penge, S.E., October 1, 1868.

[With reference to this query I may remark, that I believe to have seen the gall Rosa arvensis, but am not quite certain. In observations on "standard" roses, nould be noted whether the galls are on the head of the plant, above the point budding," or on shoots or "runners" from the root or base of the stem.—MCLACHLAN.]

Enoicyla pusilla, the terrestrial Trichopterous insect, bred in England .- At page of the present volume I noticed the finding by Mr. J. E. Fletcher, of Worcester, the larvæ and cases of a terrestrial caddis-fly, which were probably those of misilla, Burm. Both sexes of that insect have now been bred by Mr. Fletcher n these larvæ. He found about 200 cases, and remarks that the larva feeds on s and lichens at the lower part of the trunks of trees growing in damp situas. When it ceases feeding, it stops up both ends of its case and burrows into ble earth, or moss, if the earth is not suitable, but only to a slight depth. Some gos appeared early in October, though at that time some of the larvæ had not ned to pupæ. This insect is the most important addition to our Trichopterous na that has yet been made. Through the kindness of its discoverer I have eived a living example of both sexes; the female (Dromophila montana, Heyden) the merest rudiments of wings, and a stoutly developed abdomen, looking ething like certain Coleopterous larvæ (e.g., Crioceris), but with long porrected onno. The larva has no external respiratory filaments. - R. McLachlan, Lewisn, 14th October, 1868.

Note on Agrypnia picta, Kolenati.—In noticing my capture of Agrypnia picta M. Mag., Oct., p. 125), Mr. McLachlan has made a slight error. Ho says I

144 [November 144]

took the insect "in August," but it should be "in June." Mr. McLachlan wor appear to think that it must have come from a distance, but there is plenty water about Highgate—the seven large ponds communicating with each other, instance, besides other pools, with reeds, rushes, &c., growing in them.—H. Pavi

Dipterous larvæ voided by the human subject.—The enclosed larva was sent me from Gloucester to be named; can you assist me? It was taken from betwee the bed-sheets of an old imbecile patient who was very dirty in his habits. Duri life it was of a faint cream-colour, with a black spot on the head. It was veactive.—G. J. Hearder, Joint Counties Asylum, Carmarthen, Aug. 27th, 1868.

[This larva is evidently Dipterous, and Professor Westwood, to whom submitted it, says it is that of an Anthomyia (Muscidæ), and was no doubt void from the intestines of the patient. Similar instances are recorded in his "Int duction," vol. ii., p. 571, and a table of the numerous records of like occurrent may be found in a paper by the Rev. F. W. Hope, in the Transactions of the Emmological Society of London, ser. 1, vol. ii., pp. 266-268, in which the fanciful ter "Myasis" is used to denote the supposed disease occasioned by Dipterous lar in man. Their presence is no doubt due to deprayed and vicious appetite. The live naturally in animal excrement, decayed vegetable matters, &c.—Eps.]

On the Natural History of Acronycta alni.—On Monday evening, July 20th was looking over some standard roses growing upon a bank on one side of the dri in front of this house, when I noticed upon a leaf what appeared to be a rece deposit of the same nature as that, which proved so injurious to Tobit's eyesig! A nearer inspection, however, resolved it into a nondescript Lepidopterous lar half doubled round upon itself, and resting upon a slight silken pad. I wendeavour to describe it. Its length was about 10 lines: head small, dark brow somewhat deeply notched above: body rather slender, of uniform thickness: cold dark dirty brown, gradually paler towards the belly, except the last three segmen which were white, with the ground colour faintly showing through: upon es segment were conspicuous black warts, small but conspicuously raised, bear short slender brown bristles of the ordinary type, except those on the post-capi segment, which were slightly clubbed. Legs sixteen. Whole body very gloss appearing as if varnished.

I confess that I was quite at fault, and unable to "put a name on" to creature (as they say in the Isle of Man), even after consulting every availat book; and I must regret that I did not at the moment indite a more minute do cription of this—the early stage, which seems to be little known, of a famo caterpillar, for before morning it had effected a wondrous transformation indee and appeared as a full-blown and unmistakeable larva of A. alni.

Its sombre garb doffed, and in due course devoured, after the manner of ikind, my capture presented itself to my delighted eyes in black velvet suit, broad slashed with gold, and bristling with those peculiar tags which are the distinguishing badge of A. alni in embryo. For food, it at once selected the leaves of the from the many submitted to its choice rejecting entirely those of the rose, upon which it was found, and of the Spanish chestnut, which was the nearest tree when

145

could have fallen. There was no lime tree, I may observe, within twenty yards the spot. It fed well, and throve accordingly, till the 27th, on which day, ring previously ascertained that its features were still a desideratum in Mr. ckler's (Lepidoptero-) ancestral portrait gallery, I dispatched it per post to that the them and to sit—or rather recline—for its likeness. I enclosed in its travelling riage a piece of dead bramble-stick for its edification, if constructively inclined, route. Of this it appeared to have availed itself without loss of time, for Mr. ckler writes me word that, on its arrival at Emsworth next day, it had half fied itself therein, and was hard at work throwing out the dust of its excavation. It is some difficulty it was safely withdrawn from its "Adullamite" habitation in an eave," and duly depicted. Again at liberty, after a slight refection to recruit strength, it speedily returned to its engineering, which it prosecuted so orously, that it soon emerged at the other end of its tunnel, and turned a neless papa after all upon the debris of its work on the 1st August.

P.S.—Thus far the individual A. almi in question; whose capture further set searching to learn as much as I could of the history of this somewhat eccenspecies. Perhaps a summary of the results, as gleaned from the pages of the dogist, Intelligencer, Magazine, and Entomologist, may interest some of your ders.

I find the capture of about 75 specimens recorded since 1844; of which 57 e taken in the larval and 15 in the perfect state,—the pupa having been met h only three times. The earliest recorded capture of the larva is by Mr. Hawley July 27th, 1846 (Zool., p. 1659), so that mine on the 20th of the same month st be regarded as exceptionally early, -one of the results of a precocious sum-. Mr. Douglas, indeed (perhaps in error?) writes of it as occurring in the w Forest on oaks in June (Zool., p. 3587). It has been met with at Sutton k, near Birmingham, as late as September 10th, 1851 (Zool., p. 3334). Mr. by, of Wetherby, alone seems to have noticed the earlier stage which I have empted to describe. He writes (Entom., Sept., 1865, p. 287), "Whilst beating Bishop's Wood, near Selby, on the 27th of July, I had the good fortune to ain one larva of A. alni, feeding on alder; it was changing its skin for the last e. I must confess I could not make it out until after the change, so totally ke in colour, and also minus the clubbed hairs, with the exception of two very all ones on the second segment." The trees and bushes, from which the larva been taken, and upon which it is said to have fed, have been oak, elm, alder, el, hawthorn, beech, lime, Spanish chestnut, horse-chestnut, sycamore, black lar, sallow, willow, and bramble; apparently showing a general preference for four first named. It has also been picked up upon buckthorn, holly, dock, and ss; upon gateposts, walls, palings, and, lastly, upon a gentleman's coat. At t a dozen seems to have chosen a death by starvation to the prison-fare offered n.

Whimsical as appear to be its tastes in the matter of diet, its vagaries in sering upon the next stage of its existence are even more remarkable. In fact, could seem to set about the work of pupation without any fixed rule or principle proceeding, at least in a state of captivity. Thus (premising that rotten wood the formation of its cocoon seems generally to have been regarded by its captors

146 Novem

as a sine qua non) we find Mr. Hawley's capture, already referred to, gladly avail itself of the provision thus made for it; while Mr. Bedell's, on the contrary, clining the sapid material, devoted its constructive energies to dead leaves (Zo p. 1140). Another of Mr. Hawley's retired into the earth (Zool., p. 1228). Ot four, taken near York, 1856-1858, all turned pupe, in Mr. Anderson's words, or under the earth without the least appearance of a cocoon" (Zool., p. 6284). bark wigwam was the selected resting-place of one which fell to Mr. Barrett's (Ent. Mo. Mag., iii., p. 37). So much for its metamorphotic efforts in captiv Or its natural doings we have, fortunately, one record to guide us in spelling its true history. Mr. H. Moore was the lucky observer. "Going along a sar lane here (Albury, Surrey) on September 1st (writes that gentleman), I obser what appeared to be sawdust sprinkled on some bramble-leaves. I thought probably the work of a larva, and so looked for some stem whence it might h fallen. I now found an old dead bramble-stick, one end of which was hollow I split this down about a couple of inches, and disclosed a full-fed larva of Acrony alni. On looking at it two or three days later I found it had changed. The pupa rich deep chestnut colour, and is head uppermost in the stem. There is no pearance of silk or cocoon, and the thin layer of pith above the pupa is v slightly stuck together." (Zool., p. 8211.) The reason why my recent capt deserted its prickly abode was doubtless that suggested by Mr. Buckler, viz., t the stick provided was not long enough to satisfy its energies, and to afford it complete concealment it desired. The three recorded finds of the pupa throw further light upon the matter. One is stated to have been "off hawthorn" (Zo p. 2883), whatever that may mean; the other two are without particulars.

Its appearance in the imago state seems to take place between the middle May and the middle of June; May 22nd and June 23rd being the earliest a latest dates of its capture at large noted. All such captures appear to have be "at sugar." Once only do I find an autumnal emergence to have occurred. I larva, to which reference has been made as captured by Mr. Hawley on June 27 spun up the next day in rotten bark, and emerged September 18th of the sayear. One taken by the late Mr. Stone, and kept in a warm room, made appearance February 22nd (Zool, p. 7972); and Mr. Pickard-Cambridge has it out on the 22nd of May in captivity.

In one state or other Acronycta alni has occurred in most of the southern a midland counties of England; but, apparently, not farther north than Lancast and Yorkshire;—which last county, however, seems, singularly enough, to be British metropolis of the species, since considerably more than a fourth of recorded captures have been made within its limits. It has not been reported from Wales; and only a solitary specimen from Ireland.

This about exhausts all I have been able to learn of the natural history of t interesting species.—H. A. Stowell, Breadsall Rectory, near Derby, Septem 8th, 1868.

Spilonota lariciana.—This insect is not rare amongst the larches on the Lick Hills near here, and has a black variety like its near neighbour. Is this a speci or is it not rather like *Ditula angustiorana*, an example of an insect feeding acea and Conifera alike? Zelleria hepariella seeems, like this latter insect, to ct the yew.—R. C. R. Jordan, M.D., 35, Harborne Road, Birmingham, tember 12th, 1868.

Acherontia Atropos at Margate.—Whilst staying at Margate the end of August, eight fine pupes of this insect were brought to me by boys who had found them sociated fields there. We have been successful in breeding four splendid bimens; the fifth has no wings, and the remaining three pupes are dead. They and very powerful voices, and we were once awoke in the night by their loud ueaking" the moment they came out.—H. Ramsay Cox, West Dulwich, 3rd ober, 1868.

Small specimen of Vanessa Atalanta.—On the 7th September I captured here a rf specimen of this species. It is quite perfect in its markings, but is remarker small, measuring only 1 inch and 8 lines.—James Dallas, Heworth, York, tember 19th, 1868.

Grapta C-album in Devonshire.—I have much pleasure in recording the capture Grapta C-album at Dartmouth. It is not included in Mr. J. J. Reading's alogue of the Lepidoptera of Devon and Cornwall; but that gentleman romarks, age 23 of Part 1, that it is reputed to have occurred in the district; so it is a satisfactory to be able to add another butterfly to the fauna of the two counties, insect in question was taken yesterday by my friend J. W. Peers, Esq., while as regaling itself on some ivy blossom, in company with many brilliant V. tanta. Mr. Peers saw another, but was unable to catch it, as the ivy was ving on the top of an old ruin, and the greater part of it was out of reach. I ald have gone to look for more to-day, but it has rained incessantly.—Gervase Mathew, H. M. S. "Britannia," Dartmouth, 6th October, 1868.

Captures of rare Lepidoptera in 1868.—The following is a list of species captured season by myself and brother. Margate—Argynnis Lathonia (A. G. Boyd), tember 7th; Heliothis armigera (ditto), end of August; Argyrolepia sub-Baumana, A. Dubrisana. Herne Bay—Eupithecia subumbrata (2). Cheshunt—Deilea lineata, August 25th; Acentropus niveus; Achroëa grisella, by mothing; Hypoeuta vigintipunctella, bred; Depressaria capræolella (15) February 28th to il 15th; D. pastinacella, at light; Gelechia rhombella, common on apple trees; erna decorella, in thatch; Phyllocnistis suffusella and saligna; Colcophora argen, bred; Nepticula centifoliella, bred.—W. C. Boyd, Cheshunt, October 15th.

Notes on Mr. Jenner Fust's "Distribution of British Lepidoptera."—On looking ungh Mr. Jenner Fust's paper on the "Distribution of Lepidoptera in Great ain and Ireland," in the "Trans. Ent. Soc.," 3rd ser., vol. 4, I observed that a species which occur in Worcestershire are not indicated as occurring in subvince 14, of which this county forms part. There are also a few I have captured a which are indicated with a mark of doubt, and one which is said to rest on 7 one authority. These species I give as follow:—

L. lurideola (complanula), common; A. interjectaria, not rare; A. inornata, have taken four; E. consignata, one; E. linariata, two; E. dondonwata, three of four; S. vetulata, two; X. sublustris, one; N. saponaria, two; C. morpheus, common; C. alsines, attracted to light in three localities—in one plentiful; A. aquilin common at flowers, especially Centranthus macrosiphon; A. porphyrea, one at light E. fulvago, one; C. pyralina, one at light; P. caspitalis, one.—J. E. Fletche Worcester, 12th August, 1868.

Abuses in nomenclature.—I write to call the attention of the readers of the Entomologist's Monthly Magazine to abuses of nomenclature, which are growing such magnitude among both British and foreign Entomologists as to threaten so to become of very serious inconvenience. I do not intend to quote many instance but I hope this protest may not be altogether useless.

In the first place it is very common, when a name is required for a new specior genus, to combine it out of that of an old one. Thus we have for prefixes, iboth species and genera, Hypo., Pseudo., Anti., Epi., Neo., Hetero., and mar others; and for affixes, oides, ides, ina, ideus, ella, illa, &c. I will give ju one instance of the absurdity of this practice. In my Manual of European Butte flies, I adopted the MS. name of Hypozanthe for a new Chrysophanus. The translate, by the revolutions of synonymy, had already changed its name, so that the mes species had worse than a nonsense-name; it had a name that tended, if an thing, to perpetuate error and confusion.

Another practice existing alongside with the other, and, if possible, likely become more serious, is that of using the name of a genus as the specific name a new species in another genus (often the next) which has some superficial resemblance to it. This custom, which is, I believe, much more prevalent abrot than at home, is most objectionable, for it is highly probable that in some instance at least, the supposed superficial resemblance may prove real, and the species me find itself in the genus whose name it already bears, necessitating that greatest evils in nomenclature, a change of the name of a species.

Again, I wish to ask, is it allowable, when a careless anthor has found innumerable bad genera which have been ignored by common consent for fif years, to upset well-established genera combining several of his, to restore hobsolete names, merely because one of his types happens to fall into some go modern genus? I shall be glad to have the opinions of others on these points. W. F. Kirby, Dublin, August 25th.

Note having reference to hereditary variation.—Our friend Mr. Harrison sent m last year, some eggs of a betularia that had "selected" a black partner, and the spring I bred from them two black females and one black male, and five other very darkly mottled.—H. D'Orville, Alphington, near Exeter.

Note on variation in Amphydasis betularia.—My friend, the late George Gibso received from Mr. Harrison of Manchester, through Dr. Knaggs, some eggs of betularia which were intended to produce an intermediate variety in the imag He fed the larvæ, I think, on birch, and at his death the pupæ were handed over

3.;

The moths have lately emerged, and the result is, that for every specimen of cordinary type five negroes have appeared, but not one of the intermediate riety. Perhaps you may think this worth a corner in your Magazine.—J. L. URTICE, 22, College Street West, N.W.

Note on Scoparia Zelleri.—The specimen of Scoparia Zelleri mentioned by Dr. aggs in this month's "Entomologist's Monthly Magazine," p. 131, was captured me in the station at Norwood junction, on the 17th August, last year (1867). 'r friend, Mr. Wormald, was with me at the time, and we were just returning me a rather unsuccessful expedition to West Wickham, the night being rather dfor the time of year, with an east or north-east wind blowing. We had only be the station a minute or two, when we observed the insect flying near a ap. Mr. Wormald had folded up his net, and I was about to do the same, when ffected the capture. On examining it some days after, we thought it could not Scoparia cembra; so on the 27th of the same month we took it to Dr. Knaggs, I as he appeared uncertain about it I left it with him, he kindly offering to see he could identify it with any described species. It has been in his possession are since, and I suppose he must have overlooked the fact of his having had it so ag, as he calls it a "second specimen."—H. PRYER, Holly Village, N.W.

Yama-Mai culture.—As many of your readers may have heard of, or experienced, asiderable disappointment in the attempt to rear these useful creatures, perhaps we words from one who has been more fortunate may not be devoid of interest.

I am indebted to my friend Mr. Gascoyne, of Newark, for fifty fine eggs, the oduce of his own English-bred examples. They were nearly all fertile, hatching t young larvee of such a size as to make it more than usually mysterious how pair receptacle, large as it was, could contain them. The young worms were used at once upon shrubs of the common oak (forced forwards some six weeks in ticipation of their emergence), and were never subsequently touched. The little uses were in a large pedestal fernery of glass, between three and four feet in uneter and height, and with a perforated zinc window before and behind. They be pretty well until their first moult, when many died.

I had been cautioned to keep them dry; and, beyond an occasional watering refully applied to the oaks at their roots, this advice was implicitly followed. each succeeding moult many failed, until ten individuals alone comprised my tole stock. By this time their trees had been nearly bitten bald, but having a rkey oak in the garden (then in tender green leaflets), pending the providing her pabulum, I gathered some bunches, and, saturating asponge, tied it round bir stems. Two circumstances struck me. First, they left what remained of his previous food, and attached themselves so entirely to their later, that the lights hoak took heart to bud out again, and even get into small leaves.

Next, I constantly observed them (big fellows now) drinking away at the onge, like haymakers at their beer-keg! From that time I sprinkled their ughs occasionally; their succeeding moults were accomplished without the loss a single specimen; with one exception, all the rest spun noble cocoons, and I d no further anxiety about them.

150 [November,

I therefore venture, under correction, to differ from those who counsel dryness; and suspect the losses sustained during their earlier changes to be owing to the want of a certain vigour occasional moisture might supply.

They gracefully swathe two or more oak-leaves round their silken tabernacle, which is suspended from above by a substantial ligature. The moth generally escapes by nine a.m., effecting its exit much in the manner of Saturnia carpini. The mechanism employed at the top of the cocoon with a view to easy liberation appears more simple than that of carpini, judging from the very large aperture which the mere internal pressure of the enclosed insect produces in a moment where no external signs of one was visible.

Surely a little practice might establish the worm in Ireland, and make it a source of considerable profit to a peasantry not inclined to severe manual labour.—EDWARD HOPLEY, 14, South Bank, Regent's Park, October 12th, 1868.

Hadena peregrina at Lewes.—A Noctua, which proves to be H. peregrina, was taken on the downs at the back of my house, by one of my school children.—MAETHA MEEK, Lowes, September, 1868.

Crambus rorellus at Folkestone.—At the end of May last, I was fortunate enough to capture a fine specimen of this rare species at the above locality.—E. G. Meek, Old Ford, E., October, 1868.

Orthosia suspecta at West Wickham,—On July 15th of this year, I took, at sugar, a couple of specimens of O. suspecta in West Wickham Wood, in good condition and fresh. The same night I took Acronycta ligustri.—Chas. T. Chuttwell

Charocampa Celerio at Huddersfield.—I beg to inform you that a specimen of Charocampa Celerio was taken by a woman, in one of the streets of this town, on the 26th of last month.—Geo. T. Porrit, Clare Hill, Huddersfield, 19th October, 1868.

Obituary notice of Dr. Ludwig Imhoff.—On Sunday, the 13th September, 1868, at about three o'clock in the afternoon, there died at Basle, Ludwig Imhoff, Dr. Med. et Phil., after a few weeks' illness, aged 67.

A contemporary of the gifted J. J. Hagenbach, the continuance of whose "Symbola faunæ Insectorum Helvetiæ" he undertook; a fellow-student and subsequent collaborator with Prof. L. Agassiz (Nomenclator Zoologicus, Hymenoptera) his name will for all time be connected with most of the Entomological undertaking in Switzerland for the past thirty years or so, as he belonged to that small but energetic band of naturalists who, between 1830-40, undertook to work out the different branches of the Swiss fauna, the Orthoptera and Hymenoptera being his chosen share. And if to this day we possess but fragments of his labours in these groups, the fault does not altogether lie with him. As regards his doings in other departments, the pages of the standard special works by Pictet, Hagen, Heer, and a host of other workers, afford ample evidence of his constant energy in collecting and observation; and his universal knowledge of general Entomology is well shown by his own works, "Die Insecten der Schweiz," "Gattungen der Rüsselkäfer," and "Schweizerische Käfergattungen," all fully illustrated by Labram.

As a comprehensive handbook, his "Versuch einer Einfuhrung in das Studium Koleopteren" deserves also special mention; and a list of his smaller papers be found in Hagen's "Bibliotheca Entomologica."

Of late years, though always fully and diligently collecting all orders, Dr. off had devoted most of his time to the Hymenoptera, especially to the Apida, hown, for instance, by recent papers on Swiss Andrenida, etc., in the "Mitlungen der Schweiz. Entom. Gesellschaft."

But to my own mind, leaving literary attainments and professional activity both of which I am quite incompetent to speak—out of the question, the chief it of Dr. Imhoff's scientific career seems to centre in the unwearied zeal he after year brought to bear upon the discharge of his entomological lectureship he Basle University.

The study of insects is not attractive to the many; the smallness of the objects as all superficial curiosity; there is to the outsider but little inducement to or an arena where drudgery is the first prize: it is therefore not to be expected every one, even of the few earnest students who annually clustered round his re, should become an entomologist, though several such instances did happen. The eartheless, many have gathered a general acquaintance with the science there, the fact remains, that the departed teacher voluntarily kept the flame of emological lore burning steadily for a considerable period, and through good evil report, besides attending uninterruptedly to the collections of insects in Basle Museum.

If but few would answer as disciples to his call within the pale of the University, influence in other scientific circles was all the greater; and there are few Swiss omologists and collectors, alive or dead, of the present and past generation, who is not, at some time or other, derived both instruction and benefit from their recurse with him. A certain undefined reserve, perhaps pure modesty, has an prevented Dr. Imhoff from communicating, himself, the results of his life; labours and ripe experience to the entomological world; but the initiated can ally see where others have reaped the fruits of his toil.

Fully interested in the progress of natural science, as Dr. Imhoff was, he, as atter of course, did study the tide of modern thought; and it speaks well for independence of his mature judgment, and for the freshness of his mind to the that although trained in the received belief of the immutability of species, he not shut his ears to modern views, as held by Darwin and others; and, cantions he extreme as he was, he did go more than once so far as to observe to the ler, that although quite unprepared to fall in with Darwin's notions, he yet did see why so much animosity should be imported into this discussion, considering to so many facts in nature seemed to militate in favour of the Englishman's be.

Finally, a word as to Dr. Imhoff's behaviour to beginners, as experienced years by the writer himself. Constant cheering-up, though in few words; an appreson of every step forward; no proud looking down upon the opinion of others; a steady, gentle way of instruction by word and deed: such were the leading area of my late friend's teaching; and, only in June last, on an excursion to Ursern Valley, this long established intercourse was again cemented by an it days' daily exchange of ideas.

152 [November

To-day his family, his numerous private and scientific friends at home an abroad, mourn for the departed; and no doubt a full account of his active life wi soon be in the hands of all who knew him in science; but, bearing thankfully mind how much I owe him, and how many acts of unrecorded kindness on his pa have fallen to my lot, I pay my sincere tribute to the respected memory of a ma whom I shall ever be proud of referring to as having been my steady friend an first mentor in matters entomological.—Albert Müller, Penge, S.E., Sept., 1868.

## Bebiebs.

THE CANADIAN ENTOMOLOGIST: Toronto; issued by the Entomological Society (Canada. 1868.

We have received a half-sheet (8 pages) forming the first part of this publication, which is to appear "not oftener than once a month, and only when there is sufficiency of suitable matter." It is edited by the Rev. C. J. S. Bethune, Secretary Treasurer of the Society, and, if conducted with spirit, should do much toward fostering a taste for Entomology in Canada. "Exchanges," of course, take a pre minent place. Under this head two things will strike a British reader as curious one correspondent asks for "any Lycona excepting phloras," reminding us of the excessive abundance of that species here this season, notwithstanding the prophecie in which the reviewer joined a few years since, of its gradual extinction: anothe demands Pieris rapa, the newly-introduced Canadian; what would he think of the state of our cabbages at the present moment?

THE AMERICAN ENTOMOLOGIST: St. Louis, Missouri. Edited by B. D. Walsh an C. V. Rilex. 1868.

The "Practical Entomologist," published by the American Entomological Society (late the "Ent. Soc. of Philadelphia"), would seem to have expired after two years existence, and its place is supplied by the above-named publication, which we have received the first part (20 pages). The editors hold the position of "State Entomologists" for Illinois and Missouri respectively, our American cousing being more fully alive than we are to the necessity of having scientific advisers of the subject of insect depredations. This periodical, which is to be continue monthly, is devoted to information on the habits of the noxious insects of America with investigations into the most likely means of arresting their ravages; combine with sound popular articles on general entomology; and is illustrated with numerou well-executed woodcuts; all for the low price of one dollar per annum. We con dially wish it a longer life than its predecessor. One "practical" hint strikes u as well worthy the consideration of our apple-growers, as offering a possible mean of "stamping out" the apple grub (Carpocapsa pomonana), which has been more than usually destructive here during this season. In an article headed "Hog versus Apple-worms," the editors, on the experience of many orchard-keepers strongly advise turning hogs into the orchard at the time when the infested frui falls from the trees; these animals greedily devour the "fallings" before the larve has time to escape from the apples, and thrive thereon. Many instances are quote to show the good effect of this plan, and it is applied also to peach-orchards, b destroy a weevil-grub which causes great damage. The only drawback is th sightliness caused by the "rooting" of the ground by the hogs; but this might obably be partially avoided were the plan of "ringing," used by English pigepers, adopted there.

We hope again to have occasion to notice this useful publication.

TALOGUS HYMENOPTERORUM EUROPÆ, auctore L. KIRCHNER. Herausg. von der K. Zool.-Bot. Gesellsch. in Wien, Vindobonæ. 1867.

This work gives in 285 pages the genera and species of Hymenoptera, with the thor's name to each, and frequently, but not always, a sufficient indication to able us to find the description. To the parasitic groups is added the name of e insect preyed upon; this, however, is not done so fully as might have been pected. The idea is excellent, and if the execution were in any respect equal to e design, a most valuable contribution would have been made to the literature of Order. Even as it is, some assistance may be derived from it, but the mistakes d omissions are so frequent, that little confidence could be placed in it as a andard of reference, or as an oracle for the solution of knotty points. Opening e work at page 38 (Ichneumonidæ), we observe that the two first genera, Eristicus d Eupalamus, Wesm., are retained, although expressly discarded by their original thor in his subsequent works, and their species distributed among Ichneumon d Eurylabus. On p. 39, Ichneumon, sp. 1 is spelt abator, Desv., instead of obator, nereby the alphabetical arrangement is broken, and the real obator, sp. 173, is ight for in vain. Sp. 5, albicinctus, Gr., and 7, albilarvatus, Gr., should have en placed under Phygadeuon. Sp. 20, Ichn. Atropos, Newport, should have been aced under Trogus; Curtis, and not Newport, is the author of the name, which ter all is a mere synonym of Tr. lutorius, Fab. Sp. 32, Ichn. brunnicornis, Gr., is peated on p. 49, as Herpestomus brunnicornis, Gr. Spp. 46 and 47 have the me name, comis, Wesm. Next to the genus Ichneumon is placed Acrodactyla, al., which belongs to the Pimplaria, and should stand close to Polysphincta; the pical sp. A. madida, Hal., is omitted. On p. 48 we find Eurylabus dirus, Wesm., nich figures previously on p. 38 as Eupalamus dirus, Wesm. On p. 59 Microleptes lendidulus, Gr. (an Ichneumonoid form), is given as a synonym of Pterocormus cans, Gr., among the Cryptide, the blunder being caused by a typographical ror in Desvignes' Catalogue, corrected in the errata of that work. Nearly all the mes of Stephens, Curtis, and Haliday appear to be omitted, unless they chance be quoted by some continental writer. Ex pede Herculem; we have given ough to show the general style of the book, which in its present state can only rve to mislead and confound. It requires a thorough revision, to be carried out by the mere perfunctory copying of names, but by actually reading the cirimjacent matter, which alone can give meaning and arrangement to those names. ne task undertaken by the author is a great one, perhaps too much for the powers any individual. So formidable a list could not be thoroughly purged of errors. at the duty of a cataloguer requires that he should at least faithfully represent e results attained by the authors whose works he undertakes to examine, leaving em responsible for their own conclusions. We regret to observe that this obvious ity is very far from being fulfilled by the work before us. It is conceivable that future edition might be more carefully prepared from so laborious a groundork, which would be hailed with pleasure by students of the Hymenoptera, and ould go far to place them in the comparatively happy state of certainty enjoyed the Coleopterists and Lepidopterists.

154 [November,

NOTES ON SOME PARASITIC HYMENOPTERA, WITH DESCRIPTIONS OF NEW SPECIES.

#### BY THE REV. T. A. MARSHALL, M.A.

### PHYGADEUON SCOTICUS, n. sp.

Ph. niger, sub-depressus, capite coriaceo, remote punctulato; mesothoracis disco punctato, parum nitido; alarum squamulis, segmentis 2<sup>do</sup> et sequentibus, trochanterum femorumque apicibus, tibiis tarsisque, castaneis; alis fusco-hyalinis, stigmate et radio fuscis, radice pallidiore; areola pentagona, nervo externo obsoleto; terebra segmento 1° paulo longiore.

♀ Long. 3-3½ lin. (terebra excl.)

Metathorax rugulose; areolæ spiraculiferæ and pleurales distinct, the others obsolete. Spiracles orbicular. Carinated margin of the declivity of the metathorax distinct, single, not laterally toothed. Vertex with a broad shining fovea behind the antennæ. Antennæ stout, filiform, a little longer than the head and thorax, fuscous. Palpi castaneous. Body sparingly clothed with fulvous hairs. Tubercles of the first segment of the abdomen inconspicuous; all the segments aciculated, not shining; the apical segments sometimes slightly infuscated; the anus whitish.

Allied to P. abdominator, Gr., and obscuripes, Tasch (= abdominator, var. 3, Gr.), but is larger, wanting the white ring of the antennæ, and with the abdomen opaque, etc.

Two specimens from the Black Wood of Rannoch.

### PHYGADEUON ERRATOR, n. sp.

Ph. niger, abdomine rufo, polito, apice sub-compresso; segmento 1<sup>mo</sup> nigro, apice rufo; pedibus rufis, femoribus 4 posterioribus præter basin et apicem, tibiis posticis præter basin, tarsis iisdem totis, nigris; alis fuscohyalinis, stigmate et radio fuscis, radice et squamula rufis, areola pentagona, nervo externo obsoleto; antennis fusco-ferrugineis, annulo albo; terebra segmento 1<sup>mo</sup> paulo longiore.

### ♀ Long. fere 4 lin. (terebra excl.)

Metathorax and vertex as in the preceding. On the inner vertical orbit of each eye, above the antennæ, is a rufous line. Antennæ moderately stout, filiform, fusco-ferruginous, joints 7—12 white, joint 7 fuscous beneath. Palpi rufous. Metathorax and abdomen on the sides with a few pale hairs. Abdomen elongate, impunctate, shining, red; 1st segment black, long, and slender (for a *Phygadeuon*), red at the middle of the apex, tubercles not prominent.

Might be an *Ichneumon*, but for its exserted ovipositor. Allied to hygadeuon desertor, Gr., from which it differs in the number of white ints of the antennæ, the coloration of the legs, the sculpture of the etathorax, etc.

One specimen from the London district.

The following strange piece of synonomy among the *Ichneumonidæ* serves mention, if only for the purpose of inviting criticism. Of its ath I have thoroughly convinced myself, although unwillingly.

## Q ICHNEUMON CRASSIPES, Gr., i, 622.

- ♂ Ichn. latrator, Gr., i, 572 (excl. ?).
- Ste. Mand. vii, pl. 40, fig. 2; Pterocormus means, Först., Mon. Pez., 24.

The original description of *Brachypterus means* was drawn up by cavenhorst from a single specimen sent him by the Rev. F. W. Hope om Netley, in Shropshire. A similar form does not seem to have curred on the Continent; but I fortunately possess four, taken long to somewhere in the Midland Counties,—I believe at Bridgenorth. Levy agree ad amussim with *I. crassipes*, even in the sculpture of the stathorax, the most certain proof of identity. My specimens of *I. sasipes* are undoubtedly rightly named, having passed through several aminations, including one by the late Mr. Desvignes.

### Genus Aptesis, Först., Mon. Pezom., 34.

The insect named Pezomachus hemipterus by Gravenhorst (ii, 874) is described from a single German specimen, now lost. Upon the ength of that description only, it is placed in Förster's genus Aptesis; rightly remarking that it cannot be assigned to any other. It cannot assigned even to Aptesis, unless the following character of the genus modified, "das erste Segment punktirt, nicht langsrunzlig," for the it segment of A. hemiptera is most distinctly wrinkled longitudinally. It is only by claiming for them the same privilege as for hemiptera to I can allow myself to refer them to this genus.

### APTESIS GRAVICEPS, n. sp.

A. nigra, capite maximo, antennis piceis, basi testaceis, albo semiulatis; abdomine picescente, segmentis 1° apice, 24° disco, plus minus 156 [November

dilutioribus; alis metathorace longioribus, fusco-hyalinis, stigmate e radio pallide fuscis, areola irregulari, subtus aperta, vel punctiform obsoleta; pedibus testaceis; terebra segmenti  $1^{\mathrm{mi}}$  longitudine.

♀ Long. 1 lin. (terebra excl.)

Head very large, twice as broad as the thorax, and with the thora and 1st segment of the abdomen finely punctulate. Antennæ tr colorous, joints 1-3-4 testaceous, the rest blackish, 7-8 white above Areolæ of the metathorax distinct; areola superomedia short, small posteromedia hexagonal, narrow above, widest in the middle, and slightly decreasing in width thence to the apex; areolæ spiraculiferæ bisecte by a transverse carina; all the areolæ distinctly punctulate. First segment of the abdomen with the tubercles inconspicuous, medial three times wider at the apex than the width of the petiole, punctulat with 2 abbreviated longitudinal carinæ, and 2 lateral longitudinal ful rows; apex glabrous. Segments 2, etc., hardly punctulate, shining black, sometimes more or less pitchy. Terebra fulvous, the sheath testaceous, tipped with black. Fore-wings with a triangular stigma the apical nervures imperfect (in one specimen the radial cell is close on the right ride, and open on the left); areolet transverse, 4 angula or irregular, the lower nervure incomplete (in one individual the areole is obsolete, reduced to a punctiform knot; the same insect has als rather shorter wings).

I took four of this distinct and unnoticed species last month, in wood near Milford Haven.

### APTESIS STENOPTERA, n. sp.

A. nigra, antennis fuscis, basin versus testaceis; pedibus, abdomin segmento  $1^{\infty}$  apice,  $2^{4\circ}$  toto, testaceis; segmentis  $3^{4\circ}$  et sequentibus fu cescentibus; alis angustis, metathorace longioribus, fusco-hyalinis, stigma et radio pallide fuscis, areola irregulari, extus aperta; terebra abdomin longitudine. \$\$\text{Long. } 1\frac{1}{2}\$ lin. (terebra excl.)

Head broader than the thorax; both finely punctulate, almost coriaceous. Joints 1—5 of the antennæ testaceous, the rest dusk darker at the apex. Areolæ of the metathorax not so distinct as in the preceding; the superomedia irregularly hexagonal, slightly narrowe above; areolæ spiraculiferæ bisected as in the preceding; all these areolæ shining, nearly impunctate. First segment of the abdome with the tubercles medial, inconspicuons; only twice as broad at the apex as at the base of the petiole; sub-rugulosely punctulate; black, the apex testaceous, glabrous; 2 lateral carinæ not reaching the apex

8.]

cond and following segments glabrous, shining, the 2nd testaceous, the d and following testaceous suffused with fuscous (the dark intestines ining through). Aculeus as long as the abdomen, red, the sheaths sky. Fore-wings narrow, not widened beyond the middle; areolet unsverse, open exteriorly; beneath it is an oblong whitish spot, which is invades the areolet.

Resembles A. brachyptera, Gr., but may be known by the absence a white ring on the antennæ, by the black 1st segment, the longer bebra, and the differently constructed wings and metathorax.

Two specimens taken, last year and this, near Milford Haven.

Having captured no less than 8 of A. hemiptera in this neighbourod (some with developed wings), I think it worth while to note some their characters, by way of supplement to the description of Gravenrst, made from a single short-winged specimen.

#### APTESIS HEMIPTERA.

Pezomachus hemipterus, Gr., ii, 874. Aptesis hemiptera, Först., Mon. Pezom., 39.

A. alis vel brevibus apice infuscatis, bis albido maculatis, vel cometis, fuscis, fasciis 2 albidis; stigmate albo nigroque; nigra; antenrum basi, segmentis 2 et 3, pedibusque, rufis; geniculis posticis nigris.

2 Long.  $1\frac{1}{2}$ — $2\frac{3}{4}$  lin. (terebra excl.)

Antennæ with joints 1—7—8 fulvous; the rest blackish. Metaorax distinctly areated, as in A graviceps (supra). First segment of e abdomen longitudinally rugose. Six specimens.

Var. Q. Alæ abdomine longiores.

Fore-wings fuscous; one-half the stigma, a transverse fascia beneath and a large indeterminate apical spot, or fascia, whitish. The neution is that of *Hemiteles*, to which genus the insects would be referred, not necessarily identified with the hemipterous form. Two specimens.

The species of *Ceraphrontida*, almost entirely neglected in this untry, have found describers on the Continent in Nees von Esenbeck, theman, and C. G. Thomson. The following indications will show to genera and species I have hitherto ascertained to be British, inading a new *Megaspilus*:—

Antennæ & ? 11-jointed.

Mesothorax with three dorsal lines. Wings (if any) with a broad stigma.

<sup>1.</sup> Metathorax with a bifid spine beneath the scutellum.

Gen. Habropelte, Thoms., Öfv., 1858, p. 288.

\*Ceraphron, Boh.,—Megaspilus, Westw., Först.

- Sp. 1. Dux, Curt., B.E., 249, No. 1 = scutellaris, Boh., Handl., 183 p. 325, ♀ = tibialis, Boh., ibid., p. 326, ♂.
- Sp. 2. STRIOLATA, Thoms., Öfv., 1858, p. 288.
  - 2. Metathorax with a short simple spine.
    - a. Radius shorter than the stigma.

Gen. Trichosteresis, Först., Hym. St., ii, p. 99.

\*Ceraphron, Boh., Nees; Thliboneura, Thoms.\*

- Sp. 1. GLABRA, Boh., Handl., 1831, p. 328 = C. clandestinus, Nee Mon., ii., p. 276.
  - b. Radius longer than the stigma.
    - † Antennæ ♂ ramose or serrated. Eyes ♀ glabrou Both sexes winged.

Gen. LYGOCERUS, Först., Hym. St., ii, p. 99. Ceraphron, Thoms.

- Sp. 1. HALIDAYI, Curt., B.E., 249, fig.
- Sp. 2. CARPENTERI, Curt., B.E., 249, No. 10 = basalis, Thoms., Ofv 1858, p. 290.
- Sp. 3. RAMICORNIS, Boh., Handl., 1831, p. 329.
- Sp. 4. SERBICORNIS, Boh., ibid., p. 334.
- Sp. 5. PUBESCENS, Thoms., Öfv., 1858, p. 292.
  - †† Antennæ ♂ not ramose or serrated. Eyes § hairy. The ♀ often apterous.

Gen. MEGASPILUS, Westw., Phil. Mag., ser. iii, vol. i, p. 128.

- Sp. 1. ABDOMINALIS, Boh., Handl., 1831, p. 330 = tenuicornis, Boh. ibid., p. 332.
- Sp. 2. syrphi, Bouché, Naturg., 175, pl. vii, fig. 33, 36—39, and 41 = Eupelmus syrphii, Nees, Mon., ii, p. 420.
  - Sp. 3. BOREALIS, Thoms., Ofv., 1858, p. 297.
  - Sp. 4. ARCTICUS, Thoms., ibid., p. 295.
- Sp. 5. FUSCIPES, Nees, Mon., ii, 278.
- Sp. 6. CURSITANS, Nees, Mon., ii, 284.
- Sp. 7. HALTERATUS, Boh., Handl., 1831, p. 336 = brevipennis, Nees Mon., ii, p. 283, \$\hat2 = longicornis\$, Boh., Handl., 1831, p. 337, \$\delta\$
- Sp. 8. MELANOCEPHALUS, Boh., ibid., p. 337.
- Sp. 9. THORACICUS, Nees, Mon., ii., p. 283 = halteratus, var. g, Boh. Handl., 1831, p. 336.

- 10. ALUTACEUS, Thoms., Öfv., 1858, p. 296.
- CRASSICORNIS, Boh., Handl., 1831, p. 331 = sulcatus, Nees, Mon., ii, p. 277.
- 12. RUFIPES, Nees, Mon., ii, p. 277.

## Sp. 13. Megaspilus atelopterus, n. sp.

M. piceo-testaceus, capite et thorace nigris; antennarum articulis 2 mis piceo-testaceis, 3—7 rufo-nigris, cæteris nigris, scapo capite longiore; ite et thorace alutaceis; alis angustis, fere halteriformibus, abdominis n paulo excedentibus; pedibus cum coxis piceo-testaceis; abdomine ace latiore et longiore, basi striolato.

Q. Long. 3 lin.

Front broadly excavated above the antennæ, and with a small fovear with the foremost ocellus. Antennæ stout, sub-clavate, nearly as long he body, the two apical joints sub-equal. Disc of the mesothorax crufescent. Scutellum large, depressed, somewhat shining. Aboven glabrous, sub-pellucid, pale pitchy, ovate, depressed at the base, he apex sub-compressed, acuminate, and recurved. First segment the application of the length of the abdomen; the 2nd and following lually shortened to the apex. Hinder femora and tibiæ incrassated. And deflexed, vertex transverse, as broad as the thorax.

In a wood near Milford Haven; August. Distinguished from large viduals of *M. thoracicus*, Nees, by the stouter antennæ, with the 2 al joints sub-equal; by the broader and entirely pale abdomen, etc.

There are several more species of *Megaspilus*, not yet known to me name.

ii. Mesothorax with one dorsal line. Wings  $\delta$  with a linear stigma;  $\varphi$  apterous.

Gen. Lagynodes, Först., Hym. St., ii, p. 98. Microps, Hal., Thoms.

- PALLIDUS, Boh., Handl., 1831, p. 338.
- - Mesothorax with an impressed dorsal line; scutellum margined.

Gen. Ceraphron, Jur.,—Först., Hym. St., ii, 98.

Calliceras, Nees, Thoms.

BISPINOSUS, Nees, Mon., ii, p. 280.

 NANUS, Nees, ibid., p. 284 = Call. pallida, Thoms., Öfv., 1858, p. 302. Sp. 3. NIGRICLPS, Thoms., ibid., p. 302.

Besides several more not yet ascertained.

\*\* Mesotherax with an almost invisible dorsal line; scutellur not margined.

Gen. APHANOGMUS, Thoms., Öfv., 1858, p. 305.

Sp. 1. HYALINIPENNIS, Thoms., ibid.

Sp. 2. TENUICORNIS, Thoms., ibid.

There are more British species of this genus not yet ascertained. They are the minutest of the group, averaging less than half-a-line is length.

College, Milford Haven: September, 1868.

OBSERVATIONS ON THE OCCURRENCE OF SPHINX CONVOLVULI IN

BY THE REV. JOHN HELLINS, M.A.

My friend. Mr. D'Orville, having seen and captured in his garde an unusual number of specimens of this fine moth during the pa autumn, has endeavoured to make some observations which may tend throw some light on its appearance in this country; and he has kind placed his notes in my hands for publication.

Between August 15th and September 28th of this year, he cat tured 27 males and 29 females, and 2 more were brought into his how by the cat; but a very large proportion of the total number were stirely unfit, from their battered state, to be preserved as cabin specimens.

But this is to be remarked, that the good and the battered spe mens of both sexes occurred together throughout the whole period; was by no means the case that the first taken were the finest, a the last the worst.

The first moth was taken on August 15th, a female, with its abmen so flat, that Mr. D'Orville concluded it had deposited all its eg A few days later, on capturing a battered female with abdomen equa flat, he dissected it, and found in it 220 well-formed eggs, thus prove his first conclusion to have been too hasty. On the 21st August, dissected another female, and found its ova to be quite undevelop mere small green gelatinous spots. On September 5th, he tried a function that the experiment; he shut up a damaged female in a large box, supply her with diluted honey and sugar for food; on the fourth day after found her dead, but he found also that she had laid eight eggs in box; and when he proceeded to open her body, he found not

668.]

ingle egg remaining in it—thus showing that she must have deposited y far the greater portion of her burden before her capture.

On 10th September, he shut up another female in the same way, which also died on the fourth day, without depositing any eggs, and on issection was found to contain a quantity of eggs, with shells, but not fully developed. On 16th September, he shut up a third female, which lived five days, and being then at the point of expiring, was inned to a cork, when she laid three eggs; on dissection, 160 well-eveloped eggs were found in her, and carefully extracted. On 24th eptember, a fourth female was shut up; she died on the third day, and when opened had no eggs in her.

Of the eight eggs he obtained from the first female, Mr. D'Orville ave me five, which, to my great sorrow, shrivelled up; from two of the emaining three, larvæ were produced on September 26th, a period of omething less than three weeks having elapsed since their deposition; one of the other eggs, whether laid or extracted, proved good.

These little larve—white in colour, with long, black caudal horns, were put on a growing plant of Convolvulus arvensis, and during the ollowing night placed themselves in position on the under-side of a caf, and ate little holes through it; however, they soon died, one after our days', and the other after ten days' existence.

To these notes made recently, Mr. D'Orville adds one made in 1859. In that year he captured nineteen moths, and from one of the females beained a single egg; the larva from which was hatched on September 7th, and after feeding ten days on Convolvulus arvensis, died in its rst moult. And on October 13th of the same year he found a larva bout one-third grown, in a potato field, on a spot where Convolvulus rvensis was entangled with the potato haulms; it was covered with ret dirt, as if it had been in hiding under the earth. A few days later, larger larva, more than two-thirds grown, but dead, was found in a imilar situation, and brought to me.

From these facts Mr. D'Orville draws the following conclusions: rst, that the image, in this respect unlike S. liqustri, and the three pecies of Smerinthus. does not emerge from the pupa with ova fully eveloped, but rather in a very unformed state, and that they become radually formed in the body of the female—perhaps after impregnation as taken place. And here I may notice that the egg of convolvuli is of more than two-fifths of the size of the egg of liqustri, so that even then a female has her full number (somewhat between 200 and 250) eady for extrusion, she would by no means show so stout a figure as a emale of liqustri in similar circumstances.

162 [December,

The next deduction is that the larvæ are hatched in the autumn, and Mr. D'Orville suggests that perhaps they hybernate—retiring underground for protection from cold; but this I am inclined to doubt, thinking rather that if the weather permits they feed up before winter, but that if frost sets in they die prematurely.

And lastly, Mr. D'Orville concludes, that the moth itself does not hybernate, but dies about the end of September. He has his garden full of flowers, for the purpose of attracting moths, at all seasons of the year when there are flowers to be had, and he is most indefatigable in watching for lepidopterous visitors of all kinds, and yet he has, in a period of eleven or twelve years, never once seen convolvuli, save in the months of August and September, although their especial favourites—the white Petunia and the Marvel of Peru, remain in full bloom nearly throughout October, and would still supply them with food. And I remember myself finding in a bed of white Petunias, in 1858, a dead specimen of the moth, which had apparently come to a natural end, without violence. It is but fair to say that, on looking through the ten volumes of the "Intelligencer," I find two instances recorded of the capture of the moth about Midsummer; yet in the face of the overwhelming majority of autumn captures, these instances must be regarded as quite exceptioual.

As to the British origin of his specimens Mr. D'Orville has no doubt; some of them, as I can testify, were so fine, with the fringes of the wings so perfect, that they could not have flown many hours before he took them. The larvæ or pupæ, therefore, must have been in hiding near at hand, and yet his offer of a reward for either has never produced appropriate the second of the second or the second of the second or the second of the

duced any result.

I will only add (without comment—serious or joking) that on measuring the tongues of five or six moths, I found them to vary in length from  $2\frac{3}{4}$  to  $3\frac{3}{4}$  inches, the males apparently being longer tongued than the females.

Exeter: November 11th.

Sphinz convolvuli at Alloa, N. B.—I have to inform you that a very fine specimen of Sphinz convolvuli was brought me on the 5th of this month. It was got at rest in a garden here; it measures about five inches across the wings, and with the exception of being a little rubbed from being carried in the hand, is a perfect specimen. There was also one captured at Stirling, about seven miles from here on the 1st of the month.—RICHAED BORTHWICK, Alloa, October 16th, 1868.

Sphinx convolvuli, and a second specimen of Deilephila lineata in Kildare.—I captured five fine convolvuli here, in September. They were all taken at a bed of Petunias in the dusk of the evening. Another specimen of lineata was taken by me the day after I reported the former capture to you. It was on the grass lawn alive, at the middle of the day, and one of our peacocks attempted to eat it.—John Douglas, Kilkea Castle, Kildare, October 26th, 1868.

#### NOTES ON THE BRITISH HALTICIDÆ.

Learning in October, 1863, that Herr Kutschera, of Vienna, was engaged upon Monograph of the Halticidæ, I thought it desirable he should see a series of our ritish species, and that I should obtain his opinions relating to them. I therefore ade up as complete a collection of them as I was able, at the time, to do, and orwarded it to Vienna, together with such observations on the species as I thought high possibly be useful to him. This collection is now returned to me, with the companying names and observations kindly furnished by Herr Kutschera. They ill, no doubt, interest many of the readers of the "Entomologist's Monthly agazine."

Species sent by Mr. Waterhouse, e names being those of his Catalogue.	Names and Observations returned by Herr Kutsohera.	
	GRAPTODERA.*	
nsobrina	consobrina †	Foudr., Allard (non Kutschera), Dufts.?
ipelophaga		Guér., Allard. Scarcely specifi- cally distinct from the French specimens, though differing a little in the punctuation of the elytra, the formation of the fron- tal tubercles, and the anterior angles of the thorax.
	ericeti	Allard.
******************	longicollis	Allard.
racea	pusilla	Dufts. (helianthemi, Allard, non oleracea, Auctorum).
*********	montana	Foudras (cognata, Kutschera).
	HERMÆOPHAGA.	
reurialis		Fab.
	CREPIDODERA.	
nsversa		Marsham.
ruginea		Scop.
ipes		Linn.
	CREPIDODERA (Chalcoides).	
idula		Linn.
xines		Linn.
ata	***************************************	Marsh., Foudr. (versicolor, Kutsch.).
		N.B.—fulvicornis, Fab. may be identical with C. aureola, Foudr.
	chloris	Foudr.
	CREPIDODERA (Hippuriphila)	
deeri		Linn.
	CREPIDODERA (Epitrix).	
escens		Ent. H.
opæ		Foudr.
* Herr Kutschere one	200000 him 18 31 11 6 1 11 11	

<sup>\*</sup> Herr Kutschera expresses himself dissatisfied with the determinations of the species of Grapto-a hitherto made, and solveits the loan of specimens, with the view to re-examination of the group.
† Where the name in the second column would correspond with that in the first, it is omitted in remaining portion of this paper.

Species sent by Mr. Waterhouse, the names being those of his Catalogue.	Names and Observations returned by Herr Kutschera.	
	CREPIDODERA (Ochrosis).	
ventralis		Illig.
salicariæ		Payk.
	MANTURA.	
rustica		Linn.
rustica, var		Fab.
obtusata		Gyll.
chrysanthemi	***************************************	Ent. H.
Matthewsii		Curtis.
	Ваторніца.	
rubi		Payk.
ærata		Marsh.
	PODAGRICA	
fuscipes		Fab.
fuscicornis		Linn.
	SPHÆRODERMA.	
testacea	cardui	Gyll.
centaureæ	testacea	Fab. N.BAlthough the two
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	bostacca	types of Sp. testacea in the Bank
		sian collection agree with Sp
		cardui, a change in the nomen- clature is not justified, because
		Sp. testacea is very distinctly
		characterized in the Ent. Syst
		and Syst. El. by the words "the
		race et elytris lævissimis," which character certainly cannot be
		applied to Sp. cardui.
	APHTHONA.	**
lutescens		Gyll.
pseudacori	cærulea	Payk. var. (non violacea, Ent. H.
		The specimens communicated under Nos. 113 and 194* ar
		indeed not specifically disting
		from A. cærulea of Paykull, and
		are a very interesting variety o
		the same which is not mentioned elsewhere; therefore the state
		ment of M. Allard that Ch. pseu
		dacori of Marsham belongs to
		Aph. cœrulea of Paykull is per
		fectly correct, and confirmed by the habitat of the insect on the
		Iris pseudacorus; whilst Apth
		violacea, Ent. H., has a very dif
		ferent form, being more broadly
		rounded, and has a very different sculpture; and lives on Euphor
		bia palustris: nevertheless, i
		exhibits similar variations in the
		colour of the base of the anten
		næ and legs.

The specimens sent under No. 113, are the dark-legged var. common on the Iris pseudacorus is the neighbourhood of Loodon; the specimens marked 194 were from Deal, and have the legs entirely testaceous, excepting the posterior femora and the bases of the anterior femora, which are black-G. R. W.

1868.

Species sent by Mr. Waterhouse, he names being those of his Catalogue.

Names and Observations returned by Herr Kutschera.

	venustula	Kutsch. (euphorbix, Allard; cyanella, Foudr.) var. with the anterior thighs entirely red. I have identified the H. euphorbix of Schrank with the species which is very common in Austria on Euphorbix cyparissias, synonymous with Aphth. ovata of Allard and Foudr.
tro-cærulea	cyanella	Redt.(atro-cærulea, Allard; euphor- biæ, Foudr.).
ilaris		Steph., Allard.
erbigradus	PHYLLOTRETA.	Curtis (campanulæ, Redt. in Coll.)
odicornis	antennata	Ent. H. (nodicornis, Marsh.).
epidii	***************************************	Ent. H.
nelæna		Illig.
œciloceras	obscurella	Illig., Foudr. (pæciloceras, Comolli, Allard).
tra	***	Payk.
unctulata		Foudr., Allard.
ittula		Redt.
ndulata		Kutsch. (flexuosa, Foudr., Allard.)
emorum		Linn.
etrastigma		Comolli.
inuata		Redt.
chripes		Curtis(excisa, Redt., Foudr., Allard)
rassicæ		Fab.
	PLECTROSCELIS.	
oncinna	***************************************	Marsh.
	CHÆTOCNEMA,	
ahlbergii	subcærulea*	Kutsch. (non Sahlbergii, Gyll., Foudr., Allard).
ridella		Payk.
onfusa		Bohem.
	THYAMIS.	
olsatica		Linn.
orsalis		Fab.
uadripustulata		Fab.
nchusæ	,	Payk.
p	absynthii	Kutschera.
bliterata		Rosenh., Allard, Kutsch. (pulex, Foudr.).
arvula		Payk.
* This (which proves	to he a new species were popular all	lied to Sablheraii) is described by Hore

<sup>\*</sup> This (which proves to be a new species very nearly allied to Sahlbergii) is described by Herr Kutschera from the specimens sent by me, and some others from Steiermark by Herr Kahr. My specimens were chiefly taken in a marshy part of Wimbledon Common, in the month of Jnne, 1857.—

1. R. W.

Species sent by Mr. Waterhouse, Names and Observations returned by Herr Kutschera. the names being those of his Catalogue. brunnea ..... Foudr., Kutsch. (probably brunnea, castanea Dufts.). sp..... Kutschera. lurida ..... brunnea..... Redt., Ed. 2; Fondr., Kutsch. (lurida, Gyll., exparte; probably castanea, Dufts.). minuscula Foudr., Kutsch. (teucrii, Allard, non minuscula, Foudr.). membranacea flavicornis ..... rubiginosa..... Foudr., Kutsch. (flavicornis, Allard) lævis ..... Dufts., Kutsch. (succinea, Foudr., Allard). вр..... Waterhousei ..... Kutsch. pellucida ..... Foudr., Kutsch. (testacea, All.). ..... jacobææ ..... Waterh. Catal. (tabida, Illig.). According to your testimony the G. tabida, Fab., belongs to a species hitherto denominated verbasci by authors. We may adopt the name jacobææ, as thereis no other. Fab., hitherto verbasci, Panzer. thapsi ..... tabida, var. thapsi ...... Marsham. Scarcely to be admitted as a distinct species from T. tabida, as similar variations of colouring may be observed in other species. A very distinct species,\* at all nov. spec. ..... events different from T. tabida (verbasci). Marsh., Kutsch. The name exoleta femoralis of Linn, cannot be kept up in the face of the contradictions in the first and second editions of Linnæus' Fauna Suecica. sp.... Kutschera. gracilis ..... ochroleuca ..... Marsham. ...... ballotæ ..... Marsham. Reichii.. ..... Allard, Kutsch. pusilla ..... Gyll. lycopi ..... Foudr., Kutsch. nasturtii ..... ...... saturalis ..... Marsh., Allard, Kutsch. (nigricollis, Foudr.). fuscicollis ..... thoracica ..... Allard, Kutsch. (melanocephala, Redt., Foudr.). atricilla ..... Gyll., Allard, Kutsch. (fuscicollis, Foudr.). sp. 26 ...... lateralis...... Ill., Foudr., All., Kutsch., var.1

<sup>\*</sup> T. agilis, Rye, Ent. Mo. Mag., vol. v., p. 133.—G. R. W.

† Described from specimens found by me at Mickleham, in Surrer, on the Ragwort (Senecie Jacobea), in the beginning of September, 1863.—G. R. W.

† I took several specimens of this species in Darenth Wood in May and June, 1869, on the leaves of a species of Verbacuem. Specimens sent to M. Allard were returned to me as the H. lateralis of Illiger, but as none of my specimens exhibited the slightest trace of any dark mark on the sides of the elyra, as described by Illiger, I was not astisfied with the identification, and mentioned my doubts in my index accompanying the collection sent to Herr Kutschera.—G. R. W.

[This is the insect recently described as T. patrinetic by M. Allard.—E. C. R.]

Species sent by

Mr. Waterhouse, the names being those of his Catalogue.	Names and Observations returned by Herr Kutschera.	
tricapilla		Allard (non Dufts.). This is the species described by Foudras as T. atricilla, and certainly different from T. picipes, Foudr., Kutsch. (atricapilla, Redt., 1st Ed.).
nelanocephala	***************************************	Gyll. (atricapilla, Dufts., Redt. 2nd Ed., Foudr.).
	PSYLLIODES.	
ulcamaræ		Ent. H.
halcomera		Illig.
api	***************************************	Ent. H.
yoscyami		Linn.
hrysocephala	******	Linn.
hrysocephala, var. 2	nigricollis	Marsham.
p. 6 (from Lundy		maisham.
Island)	luridipennis	Kutschera.
arcida		Illig.
npronitens	cuprea	Ent. H. Your opinion regarding
icipos	instabilis	this species is perfectly correct, and M. Allard is in error. It is apparent, from specimens sent by him to me, that he really regarded this species as cupronitens of Förster. There is, at all events, confusion. I have never yet seen a specimen of cupronitens of Förster. The cuprea, Ent. H., has been groundlessly referred by Foudras and Allard to a species which is short-ovate, and which I have not seen.  Foudr., Allard, Kutsch. (non pi-
		cipes, Redt., Foudr., Allard).
ttenuata		Ent. H.
ricilla	affinis	Payk., Ent. H.
iteola		Müller.
icina		Marsh., Allard, Kutsch. (rufilabris, Ent. H., Ill., Redt., non Foudr., nec Allard; picea, Redt., Küster, Foudr.; rufo-picea, Letzn.)
	APTEROPEDA.	
raminis	orbiculata	Marsh., Foudr., Kutsch. (graminis Ent. H., Dufts.; ciliata, Oliv., hederæ, Ill.).
olendida	MNIOPHILA.	Allard, Kutsch.; globosa, Foudras.
uscorum		Ent. H.

G. R. WATERHOUSE, British Museum, October, 1868.

[It will be observed, that the length of time occupied in the examination of the bove Halticide has allowed of the introduction of certain of Herr Kutschera's alterations and additions from other sources.—Eds.]

168 December,

Occurrence of Magdalinus duplicatus, Germar, in Scotland.—Last year I recorded among my Morayshire captures that of Magdalinus carbonarius. This was a mistake, for the correction of which I am indebted to Dr. Sharp, to whom I sent an example for comparison with his Dumfries specimens of that insect. By him, also, I was furnished with extract descriptions, from Thomson's work, of several of the Swedish species that seemed most nearly allied to it. From a careful perusal of these, I concluded that M. duplicatus was probably identical with the Morayshire stranger, and accordingly requested Dr. Power to compare my specimens with those representing that species in the British Museum. This he has been kind enough to do, and his unhesitating verdict confirms my conjectures. I subjoin a description of the specimens.

Blackish-blue, linear elongate. Head sparingly punctured, slightly depressed between the eyes. Rostrum much bent, black, shining and punctulated. Antennæ about the length of the head and thorax, scape rather suddenly bent just before its swellen tip, inserted near the middle of the rostrum. Prothorax as broad as long, bisinuate at the base, with the hinder angles produced; sides nearly straight for about two-thirds of its length, then rounded towards the anterior edge, behind which a faint constriction is observable on the sides and beneath, slightly convex above, closely punctured and dull. Scutellum rather narrow, punctured, and generally shining. Elytra blue, sometimes nearly black, punctate striate, punctures oblong, interstices flat, finely coriaceous, slightly shining, and generally with only one row of shallow, squarish, punctures. Under-side coriaceous and punctured. Legs nearly black, thighs dentate.

Antennæ of female inserted immediately behind middle of rostrum.

Found sparingly on Scotch fir in Morayshire.

At first sight the colour and sculpture of my insect suggest our M. phlegmaticus; but on further examination, the more cylindrical body, shorter head, and bent rostrum serve to distinguish it from that species. It seems to be more closely allied to M. violaceus of the European list, which, however, has the head smooth, and, in the male, the rostrum straightish, with the antennæ inserted at about a third of its length from the tip.

The uniformly black colour and sulcate elytra of *M. carbonarius*, Linn., not to mention other important characters, will prevent any one who sees the two species from confounding them. *M. memnonius*, Fald., formerly *M. carbonarius*, Fab., is said to frequent *Pinus sylvestris*. It is not improbable, therefore, that it, and perhaps others of the genus, may reward future investigators in our northern forests.

—Robt. Hislop, Blairbank, Falkirk, 7th November, 1868.

Note on the genus Abbotia of Leach.—Having lately had to answer a question concerning the genus Abbotia of Leach, I may here note, in order to save persons studying the Histeridæ the trouble of searching, that the types of Dr. Leach's two species of Abbotia are in the British Museum, and appear to belong to the genus Platysoma; the species A. Paykulliana being identical with P. depressa, and A. georgiana with P. oblonga.

Dr. Leach (Trans. Plymouth Inst., p. 155) gives the locality for both species as Georgia in America, but this is probably a mistake, the insects perfectly agreeing with the European species above alluded to. As a possible reason for these apparent errors I may refer to the statement at p. 458 of Dr. Hagen's "Bibliotheca Entomologica."—Chas. O. Waterhouse, British Museum, November 14th, 1868.

On difference in shape of thorax in sewes of Hydroporus elegans, &c .- I have lately noticed that in the Q of Hydroporus elegans (depressus, Fab.) the thorax is widest towards the front, with the sides strongly rounded and much contracted behind, whilst in the & the sides are comparatively slightly (sometimes scarcely perceptibly) rounded, the thorax in a few instances being even widest behind. This posterior dilatation is especially conspicuous in all my dark vars. of the species in question, all of which are males. I find, however, some ? examples of the dark var. amongst a number of the insect recently sent to me by Mr. Bold. These were taken in a small Cumberland lake, called "Talkin Tarn," and present a somewhat different facies to ordinary brook specimens, being larger, proportionately longer, and altogether darker in tone. Schaum, Ins. Deuts., 1, p. ii, notes that the Swedish specimens are commonly longer than the German, with the black colour predominating; and abandons his former idea that these might be referable to a distinct species. I do not observe any similar sexual thoracic discrepancy in the allied H. 12-pustulatus, Davisii, assimilis, &c.; nor can I find any record of the fact, as to H. elegans, in Gyll., Aubé, Redt., Fairm., Schaum, or Thomson, all of whom state the thorax to be strongly rounded at the sides. The latter author, in his Skand. Col Supplement (IX, p. 75), simply notes the very elongate, unequal, anterior claws of the &; in which sex the anterior and intermediate legs are, also, more robust. With regard to the dark var. above mentioned, I notice a curious error in Aubé's Gyr. et Hydroc., 507, where he states that the ordinary testaceous spots sometimes disappear, and are replaced by testaceous lines,-"ce qui constitue la var. b. de Gyllenhal." But Gyll., Ins. Suec., i., 526, thus indicates his var. b.-"elytris pallidis, nigro-lineatis," and "elytra pallida, lineis quatuor disci nigris," -a form which has not come under my notice in this country. Schaum, l. c., says that the black sometimes predominates, the yellow forming mere lines; the insect then being Gyll.'s depressus. The form in which the yellow predominates he refers. to elegans, Ill.

In Lamophlaus, of which the sexual thoracic difference of outline is well known, it is the 3 that has the thorax most contracted behind. This, I presume, is due to the fact that the head, as frequently happens in Coleoptera, exhibits an excess of development in that sex, and requires a proportionate widening of the front of the thorax for its reception. The latter segment thus seems to be much narrowed behind, though in fact its posterior part is of the same outline as in the  $\mathcal{P}$ .—E. C. Rye, 7, Park Field, Putney, S.W.

Habitat of Epuræa.—Illiger, Verzeich. der Käf. Preuss., 383, notes the frequent capture of Epuræa limbata by Kugelann, under bark of apple and pear trees, in company with Synchita juglandis. The former insect is not uncommon with us in fungi; but, knowing, as we do, the parasitic habits of certain of its congeners (c.g., E. angustula on Xyloterus, E. oblonga and pusilla on Hylastes, &c.), this record of association may not be altogether without interest, especially as the Synchita is of such great rarity in this country.—ID.

Occurrence of Rhynchites megacephalus, Germ., in Japan.—I was rather surprised to find among some Rhynchophora from Japan obtained by me from Mr. Higgins, of Bloomsbury Street, specimens of a Rhynchites which I am unable to 170 [December,

separate from the well-known European megacephalus. Mr. Rye, to whom I shewed these exotics, without notice of their origin, was, like myself, quite unable to find any differential characters for them. I believe other British species of Coleoptera have been observed from Japan; and readers of this Magazine will remember Mr. Lewis' notes on the singular resemblance to (and even identity with) certain of our indigenous beetles afforded by some of his Chinese captures.—W. Tylden, Stanford, Hythe.

Further note on Enoicyla pusilla.—Mr. Fletcher writes me that he has bred fifty or sixty of this insect. He says the insects pair almost as soon as the  $\mathfrak P$  emerges, but remain united for only a short time. In confinement the  $\mathfrak P$  deposits her eggs under moss near the earth; they are excluded in a conical, ambercoloured mass, which is almost half the size of the insect.

In my previous note (ante p. 143) an error has crept in involving an impossibility, viz., the sentence in which the larva is said to burrow into the earth after having closed both ends of its case. The facts are that the larva ceases feeding early in June, then stops the ventral end of the case, and burrows; afterwards, in September, it closes the other end, and changes to a pupa.—R. McLachlan, Lewisham, November, 1868.

Insects found on glaciers.—Perhaps it is worth while to mention that, last July, while ascending the Maladetta, I observed on the final snowy dome of the glacier, at the height of about 11,000 feet, great numbers of a common-looking Chrysopa, both flying and crawling on the snow. Lower down there were none to be seen, during the two days I spent in those regions. Their occurrence in such a situation, and nowhere else, seemed quite unaccountable. On a former occasion I obtained from the glacier of the Vignemale, at a nearly equal height, a fine series of Ichneumon antennatorius, Grav. They were picked up at intervals of a few yards, alive, but feeble, each one being at the bottom of a small pit or depression in the snow. With them, and in equal abundance, was a moth, I forget what species, but probably Plusia gamma, which swarms in the Pyrenees. There were also a few of Lygaus equestris, which Ramond mentions having noticed, together with a Bupestris, in his break-neck attempt to scale the Touqueroue glacier leading up to Mont Perdu.—T. A. Marshall, Milford, October, 1868.

Lithobius forcipatus mothing.—One of my friends, in June last, had "sugared" a strip of wall, near Newcastle, to attract moths, and was considerably astonished when he returned with his light, to find himself forestalled by this centipedoid wretch, which had ascended the wall and captured the only moth attracted by the sweets; the moth, a large Noctua, was making the most violent efforts to escape, but all in vain, as the Lithobius appeared to hold it with the greatest ease, only quitting its grip when my friend, afraid of losing his specimen, put an end to the struggle by seizing the moth.—T. J. Bold, Long Benton.

[Mr. Bold's note reminds me of a somewhat analogous (but post-mortem) instance of unexpected insect hunting that occurred in my house this autumn. For three consecutive nights I found recently-mounted beetles that had been left out to dry on a setting board carefully placed so as to be unassailable by marauders, as

I fancied,) neatly dissected away from their cards; rows of tarsal and antennal tips testifying to the dexterity of the unknown operator. The insects being merely common species, and my curiosity piqued to discover what it was that caused the mischief, I allowed the setting board to remain for a fourth night, during which a sudden visit with a candle disclosed a large earwig, unctuously scooping out the abdomen of a Myrmedonia. "His end was pieces."—EC. R.]

An economic use for the galls of Cynips lignicola.—I do not remember to have seen it mentioned anywhere that ornamental baskets made of wire, and covered, astead of beads, with rows of the galls of Cynips lignicola, are hawked about for tale in the streets of London.

The thought has struck me, that were the more regular specimens of this gall arefully picked before the image escapes, or rather before the titmouse disfigures hem in its search for the tasty morsel within, they might, after destruction of the number by heat, serve as a cheap substitute for the turned wooden balls of similar ize, so often employed in ornamental woodwork.

For this purpose they might be sorted according to size, and employed, paricalarly in cases where lightness would be desirable, and where their fragility
rould not be exposed to too severe a trial: for instance, as inner borders on the
rames of looking-glasses and pictures, &c.—Albert Müller, Penge, S.E., Nov.
th, 1868.

Argynnis Lathonia at Margate.—It may interest many of your readers to know not my friend, the Rev. G. Lewis, took at the above place, during September, two ne specimens of A. Lathonia; besides some dozens of Colias Hyale.—Augustine Aviller, Manor Road, Stamford Hill, 21st October, 1868.

Occurrence of Acherontia Atropos at Dumfries.—On the arrival of the mail train a the evening of 27th September last, one of the employés about the station betied on one of the carriages a large insect at rest, which turned out to be A. tropos, and, through the attention of a kind friend, is now in my collection. It is very large specimen, measuring over five inches across the wings.—W.Lennon, ichton Institution, Dumfries, October 5th, 1868.

Sphinx convolvuli and Acherontia Atropos at Folkestone.—I had a fine specimen of convolvuli brought me last month by a boy. Acherontia Atropos has not been at all re, I have heard of several captures of larvæ and imagos. One specimen of the pertineset was found by a boy among the grass in the Warren, and brought to meet the first few days, and it died a natural death. It frequently emitted the sounds suliar to its species, always raising the thorax and bending down the head and lomen as it did so. When breathing its last it gave out a long succession of ands growing fainter and fainter, just like a succession of breathings, giving me impression that the noise was produced, not by friction, but by inspiration or piration of air. It made the noise when I first had it every time I merely touched with my finger, but when it got accustomed to such treatment, it never made it shout rather rougher handling.—Henry Ullyert, Folkestone, October, 1868.

172 (December

Capture of Sphinz convolvuli near Reigats.—On Friday morning my friend Mr. Fielding again called my attention to a large moth, taken by a little country girl at the same place where Acherontia Atropos occurred, and proving to be Sphinz convolvuli. Considering the rustic manner of his capture, the illustrious stranger had fared well. Shortly after being brought to me, he indulged in a vigorous mid-day flight, and was suffered to remain alive for some hours.

Can any gentleman resident in Scotland tell us whether a parallel has occurred this year to the extreme profusion of Deilephila galii (40 specimens) reported to have occurred not many years since at Perth?—J. B. Blackburn, Grassmeade, Wandsworth, 12th September, 1868.

Sphinz convolvult taken at sea.—A fine specimen of this moth was taken or board the "Lord Raglan" steamer on the 29th September last, when she was about five miles off Tynemouth, and is now in the collection of Mr. J. Hamilton Shieldfield, Newcastle. I have among my odds and ends a large individual of the same species, which was captured as it fluttered round the binnacle light of a sailing vessel, when she was making for the Tyne, and at a considerable distance from land.—Thos. John Bold, Long Benton, Newcastle-on-Tyne, October 14th, 1868.

Charcampa porcellus near Tynemouth.—Three specimens of the perfect insec were taken on the sea banks, near St. Mary's Island, in the last week of July, and towards the end of August its larvæ was found feeding upon Galium verum, some what further to the south, near Whitby.—ID.

Macroglossa stellatarum in the north of England.—This insect has been rather common here this year, and a good many larvæ collected; these were very easy to rear, only requiring to be plentifully supplied with the plant on which they were taken, Galium verum.—ID.

Deilephila lineata in Scotland.—I learn from my friend Mr. Dalziel Pearson that he took a good specimen of the insect on August 10th at Dunbar; and the "has heard of two more specimens of it being captured in the neighbourhood.".

Rev. E. N. Bloomfield, Guestling, November 2nd.

Chœrocampa Celerio at Birmingham.—I have just taken off the setting board very fine and perfect specimen of Chærocampa Celerio, which was caught Octobe 2nd and brought to me, alive, the next day; a little boy had found it (as he discribed, asleep) on a shutter of a butcher's shop in the Horse Fair, Bristol Stress Birmingham, one of our busiest thoroughfares; he said it did not seem at all it clined to fly away, so he had no difficulty in putting it in a box, without injur I have no doubt but that the lighted windows had lured it into so busy a place, it was just getting dusk (6 p.m.) when he found it.—Frederic Enock, 75, Rylam Road, Birmingham, October 18th, 1868.

Charocampa nerii at St. Leonards.—Through the kindness of Dr. Bowerban we have received a specimen of Charocampa nerii (the Oleander Hawk Moth). was captured in the garden of Decimus Burton, Esq., by his gardener, a few wee 68. 173

go, on an Oleander plant, at his residence, Maze Hill, St. Leonards-on-the-Sea ad presented to the British Museum by Mr. Wood, of North Lodge, St. Leonards. send a notice of this capture, in order that a correct list of the specimens taken iring this remarkable season may appear in the Ent. Monthly Mag.-FREDERICK MITH, British Museum, 6th November, 1868.

Charocampa Celerio near York .- A specimen of this rare species was taken by woman on the 2nd of October last. It was found sitting on the window blind side a cottage on Haworth Moor, near York, and was taken to Mr. Dosser, who ot it alive: it is a very fair specimen, and Mr. Dosser has since kindly added the ecimen to my collection .- W. Prest, York.

Note on abundance of Sphingide in Japan during the past summer .- As I have equently noticed records of insects, generally more or less rare, being observed multaneously here and in England, I should like to note that the present season s been most prolific in Sphingida. Sphing convolvuli has been exceedingly oundant in the imago state, and I collected 50 larvæ of the "Death's Head," in n minutes, from a small patch of Sesamum orientale. It was equally common erywhere on this plant. The "Eyed Hawk," and another Smerinthus very milar to it, but wanting the "eyes," have in the larval state stripped various trees their leaves. I cannot name others that I have found abundantly. A Japanese tist has figured the larvæ and pupæ of 18 species; and these, with two others, nich I have not met with in their earlier stages, complete a list of 20 Sphingida ticed this season in the immediate neighbourhood. All but three or four have ourred in profusion .- G Lewis, Nagasaki, 10th September, 1868.

Sesia myopæformis? in Mountain-ash.-We have a Mountain-ash apparently tacked by this clearwing. Next season I propose to make certain of the species enclosing the affected parts of the tree with network .- H. G. KNAGGS, Kentish wn, N.W.

Uatocala frazini near Manchester.-The records of 1868 certifying to several amples of this sensational species, perhaps the following authentic anecdote of a pture of a fine specimen may be new to many. Some five years back, a collector ar Manchester had an admirable example brought him, discovered by a little girl, o, being afraid to touch it, captured it safely and conveyed it some distance th-a pair of tongs! The bold and beautiful thing, experiencing, probably, a ase of intrusion, would seem to have fanned up its indolent wings at the moment st suited to the fireside forceps.—EDW. HOPLEY, 14, South Bank, Regent's Park.

Capture of Leucania albipuncta, W.V., a species new to Britain.- I took one ecimen at Folkestone, at sugar, on August 15th, 1868. A second, very much rn, example was taken at the same place, by my brother, on or about October 5th. A third, supposed to be seen by my brother and myself in the same place, aped.-T. H. Briggs, St. John's College, Oxford, November, 1868.

[This insect is closely allied to lithargyria, and is more common than that cies in some continental localities.—EDS.

174 [December

Lepidoptera at Guestling in 1868.—I send herewith a list of the rarer insects which I have met with this year, if you should think it worth insertion in the Magazine. Taken in conjunction with my former notices, it will give a very fair idea of the rarer insects occurring at Guestling. I have this year met with nearly 50 species of Macros. which I had not previously seen here, showing how little a visitor or stranger can speak to the whole number of insects occurring in any locality. This number of novelties, after three previous years collecting in the same locality, is pretty well, I think.

During the spring insects were very scarce; in fact, several species which are usually pretty common at sallows, were either absent or represented by one or two specimens only. As summer approached, however, insects became abundant.

In the following notes the first day on which the species was observed is given in each case.

March 6th, Tephrosia biundularia; several specimens on tree trunks; the summer brood appeared as early as June 20th. April 21st, Eupithecia dodoneata; one specimen only. April 30th, Platypterys lacertula; Stainton's Manual gives end of May, but I see it occurred here on May 3rd, in 1865. May 8th, Tephrosia consonaria, on the trunk of a tree. May 16th, Platypteryx hamula. May 18th, Herminia barbalis; three among underwood. May 19th, Selenia lunaria; four, all females, as were the few I have taken in former years. May 25th, Arctia villica; I met with five specimens this day; I believe it is abundant here. May 26th, Cherocampa porcellus, flying, at dusk. May 28th, Eurymene dolabraria; three taken-one by mothing, one at light, and one at sugar. May 30th, Eupisteria heparata; this seems common here among alders; unfortunately I did not search for it early enough, and hence most of the specimens were much worn. June 1st Tephrosia extersaria; came not uncommonly to sugar; Botys lancealis, several; Pterophorus tephradactyius, this is plentiful here. June 2nd and 3rd, Boarmia roboraria, a pair at sugar; Cymatophora fluctuosa, several were taken, but were very restless when boxed. June 5th, Aplecta herbida; three came to sugar. June 6th, Diphthera Orion; two at sugar. June 11th, Agrotera nemoralis; one worn specimen. June 24th, Cidaria dotata. June 27th, Limacodes testudo, by mothing; and Acronyctu ligustri and Rodophæa tumidella, at sugar. July 2nd Cledeobia angustalis; plentiful in one spot on the beech at Pelt. July 7th, Phycis roborella; several by mothing and at light. July 13th, Ennomos erosaria, two females; insects came pretty freely about this time to light; among them were single specimens of Arctia fuliginosa, Notodonta ziczac, Cidaria silaceata, Macaria notaša, and Ennomos fuscantaria (22nd); also several Eupithecia succenturiata Eupithecia centaureata, Tethea subtusa, Ptilodontis palpina, Notodonta camelina Platypteryx hamula, Pyrausta purpuralis, Paraponyw stratiotalis, and Acronycta auricoma; the latter insect was very restless, and most of the few specimens taken were much injured. July 30, Tethea retusa, and August 1st, Ennomos tiliaria Q by mothing. August 6th, Sphinz convolvuli, a very fine specimen; and August 10th Deilephila lineata, as recorded (Ent. Mo. Mag. for September). August 26th, three Sphinz convolvuli appeared in my garden, preferring petunia and scarlet geranium; they were observed almost every night for a week or so, when two out of the three disappeared; but one has been seen occasionally up to the present time. E. N. Bloomfield, Guestling Rectory, near Hastings, September 23rd, 1868.

Second broods?—August 29th I took, in a wood near Polegate, specimens of elitwa Athalia and Sesia cynipiformis  $\circ$ . Is it not very late for both these ecies?—In.

Observations on the occurrence of Colias Hyale in Britain.—The occurrence of lias Hyale in such unusual numbers and localities this year seems naturally to ggest the idea of a migration of this species, which, however, does not seem to confirmed by the accounts of its appearance in different localities.

For instance, on page 107 of the present volume of the Magazine, a corresndent states that he took Hyale in fine condition at Margate on or before July th, and that in a few days afterwards it was common, and by August 7th so worn t as to be hardly worth catching.

At Haslemere, thirty miles inland, and at a considerable elevation above the cel of the sea, the first specimens were met with on August 5th, beautifully fine; d others from day to day until August 15th, all in good condition. After this te the weather became rough, and they disappeared.

On August 31st Mrs. Hutchinson tells me a specimen was taken by her son at ominster, which, when first seen, was perfectly fine, and was only injured a le in catching.

Now, if this had been a migration of Hyale, and it had become worn so early August 7th on the south-east coast, it could not well have appeared in fine conton at Haslemere from August 5th to 15th, much less at Leominster on August to Neither, for the same reason, could the specimens taken inland be stragglers in its usual breeding places on the coast.

On the other hand, it is absurd to suppose that eggs or pupse could have laid years waiting for an exceptionably hot summer to bring them to perfection, even posing that the clover fields, in which they appear to feed, were permanent, tead of being sown in rotation with other crops.

The only way, therefore, in which I can explain its appearance in such unusual widely separated localities, is by supposing that when engaged in egg-laying, female must forsake the ordinary habit of the species, of flying up and down or two clover or lucerne fields for hours and, indeed, days together, and fly, as an, very rapidly across the country, laying a few eggs here and there in the ious clover fields over which it passes, and that the larvæ, in a favourable, i. e. and dry summer, feed up rapidly, escaping their worst enemy in this climate—ald, and so the perfect insects are found, earlier or later according to the climate, two, or three in a clover field in the inland districts, and in large numbers in second districts in which the insect usually occurs.

Thus I am compelled, contrary to my will and usual practice, to offer a theory

Explanation of this unusual visitation, and can only hope that it will be found, mately, to be borne out by facts; but I can give one fact slightly to the point. A young friend of mine, Master Stuart Nicholson, of Liphook, near Haslemere, wed me a female which he had taken there on the railway embankment, and that he disturbed it from a small hollow, and that its wings were not sufficiently lened to enable it to fly far, so that it flew heavily very short distances and was a caught; and the appearance of the specimen, its exquisitely perfect condition, the brilliancy of its reddish fringes, are strong confirmation of his statement ertainly never could have flown far.

176 December,

That butterflies may sometimes be disturbed before their wings are dry know, for last July a Vanessa cardui tempted me across a large field before it was secured, by its curiously heavy and short flights, and when captured, its wings were so limp, that it seemed impossible it could have used them for flying.—CHARLES G. BARRETT, Norwich, November 6th, 1868.

Description of the larva of Lycana Artaxerxes.—On the 8th May, 1868, Mr Doubleday kindly presented me with three larvae of Artaxerxes, about half-grown which had been sent to him by Mr. Wilson, of Edinburgh, who found them on Helianthemum vulgare.

They fed well on this plant, and were always on the under-sides of the leaves to which they assimilated so well as to be difficult of detection.

The larva is of the usual Lycana shape, somewhat onisciform, short and thick being arched on the back, sloping on the sides, the spiracular region swollen, am projecting laterally much beyond the ventral legs; the segments appear deeple divided, especially on the back, down which are two rows of rather peaked cone like eminences, with a dorsal hollow between them, the second segment simply rounded above, and rather longer than the other, and tapering a little near the head, which is very small and retractible; the anal segment tapers very little is rounded behind, and hollowed above on the sides; the twelfth segment has small and prominent wart on each side.

The half-grown larva is from three to four lines in length, pale green in colour and clothed with very fine and short whitish bristles. The dorsal line, beginning on the fourth and ending on the twelfth segment, is of a faint brown, though wide and more strongly marked just at the beginning of each segment, and widest at it termination on the penultimate.

On the sides of the fifth to the tenth segments are double oblique lines slantin backwards and downwards, of paler green in front and darker green behind, that that of the ground colour. At this stage of growth the lateral projecting ridge of swellings broadly pink, with scarcely an indication of a central paler stripe; the belly and ventral legs pale yellowish-green; the anterior legs flesh colour. The head black, base of the papillæ flesh colour, and a streak of the same above the mouth.

On approaching full-growth its length is about half-an-inch; the oblique stripe gradually disappear, and its green colour becomes rather darker; a pinkish-whit stripe runs along the lateral prominences, broadly bordered above by a stripe or rose-pink, and beneath by a broader stripe of still darker pink; the spiracles and flesh-colour, situated in the upper pink stripe, very minute and inconspicuous. The ventral legs green, and the anterior legs pinkish spotted with brown.

Two changed to the pupa-state on May 21st, and the third a week later, all in nearly perpendicular positions, amongst, and slightly attached to, the stems of the Helianthemum by a few silk threads near the ground.

The pupa is about four lines in length, smooth, and without polish, rathe thick in proportion, the head rounded and prominent, the thorax rounded above the abdomen plump and curved a little backwards, its extremity being hidden in the shuïvelled larva-skin which adheres to it. The colour of the head, thorax, and wing-cases blue-green, a black curved streak obliquely placed on each side of the

head; the abdomen yellowish flesh colour, a deep pink stripe at the sides enclosing a central white one, which can also be seen showing through part of the wing-covers.

Two of the butterflies appeared on June 13th and 14th.—WM. Buckler, 3msworth.

Natural history of Hepialus hectus.—To the very arduous, long-continued, and aluable exertions of Mr. Joseph Steele, of Congleton, in elucidating the history f this species, I am deeply indebted.

The eggs are globular, small, and bluish-black, and are laid by the  $\, \circ \,$  over fernakes towards the end of June.

The young larva is hatched about the middle of July, and is then of a drab olour, with brown head, and plates on the second and anal segments, and, with ne aid of a lens, the hairs on its body are easily seen.

It burrows in the lower part of the stem, and feeds in the root of Pteris pullina, and grows but slowly its first season.

When a year old it makes good progress, and by or before the end of its second atumn it has apparently attained its full dimensions; it then ceases to feed, and tits the root, not however going beyond two or three inches from it, and there in a earth remains dormant until the following spring.

In April it re-commences feeding, and continues to about the end of May or ginning of June, according to the locality and season, though not feeding in the ot as before, but attacking the young shoots of the fern; the parts bitten are al excavations, about five or six lines long in a vertical direction, and from two three lines broad, and hence considerable exudation of sap ensues, which probably may part of the sustenance of the larva, as at this time it is found quite wet, and e stem and soil are even saturated.

At the end of May or early in June it is full fed, leaves the fern, and just on the face of the earth, amongst dead leaves, and often under moss, spins an oblong 200n, lined with silk, and covered with light vegetable or earthy matter. It mains but a short time in the pupa state, as the perfect insect is disclosed during a month of June.

The full-grown larva is about an inch and one-eighth in length, cylindrical, ander, and tapering a little towards the head, and also just towards the anal remity; the head being broad in front and rather flattened, the sides rounded.

The transverse wrinkles on the segments beyond the fourth are so regularly

uniformly indented, that the segmental divisions cannot well be distinguished in them, the body appearing like a series of rings, each segment being subited into four, the second in front being the widest, and the rest of equal width. Its colour is a pale drab,—more or less pale in individuals,—and opaque, oming on the thoracic segments only a little transparent and shining, and y are furnished with brilliantly-polished plates or horny markings in the foling order. A black or blackish-brown plate, rounded behind, covering the er surface of the second segment; the third and fourth have each a transverse sal narrow oblong plate in front, and a very small one on each side below it; a little further back, on each side, is a drop-shaped plate, and just above the san oval or circular one; all of these plates, besides one on the anal tip, are to brown, as also is the head, and highly lustrous, contrasting with the dull earance of the rest of the body.

178 [December,

The tubercular blackish dots are very small, each emitting a fine hair of great sensitiveness. The spiracles very small and black.

The larva is extremely difficult to inspect carefully, and evinces the greatest aversion to light, and makes rapid efforts to hide itself; at such times, if one of its hairs be touched with a finger, most violent contortions ensue, or else it springs backwards, and will run that way quite as rapidly as forwards,—and in its twistings and wrigglings it rivals the most nimble of Tortrices.

The pupa is about five-eighths of an inch or little more in length, very slender, and of about uniform bulk throughout; the head and back of thorax a little prominent; the abdomen but slightly curved backwards, long, and scarcely tapering at the end, which is obtusely rounded.

The wing-cases very short in proportion.

On the back of each abdominal ring are two transverse ridges of minute curved points or hooks, and a pair of them on the under-surface of each wing, the penultimate having a ridge of them in addition, and a circlet of them on the blunt and rounded tip.

The colour of the pupa is rather dark brown, but the golden blotches begin to appear through the wing-covers, and increase in brightness as the hour draws near for the disclosure of the image, the pupa previously making its way nearly out the cocoon in readiness. The moths bred were all out from the 26th of June to 6th of July.—ID.

Notes on the larvæ of some fir-feeding Lepidoptera.—Guided by information received from my friend Mr. Machin, I went to work in the beginning of April last to search for larvæ or pupæ of Retinea turionana in shoots of Scotch fir. On the 9th, at Woolmer Forest, I found the shoots of the young trees much infested with larvæ which I supposed to be those of that species, and accordingly collected a lof them. Afterwards, however, being informed that these were probably only young larvæ of Buoliana, I desisted from collecting them (which I have since hat cause to regret), and confined myself to searching for the pupæ of turionana, which I soon learned how to obtain.

Now I know very well that some years ago Mr. Machin carefully described the habits of this species in the "Intelligencer," but as it is necessary to my purpose to give an outline of them here, I hope I shall be pardoned the repetition.

The larva of turionana feeds during the winter inside the centre shoot at the tip of a branch of Scotch fir, generally selecting the topmost centre shoot of a young tree. This it hollows out, eating its way quite down into the pith below the ring of side shoots, which it leaves untouched, and makes a hole at the side of the woody part, among the needles, through which the excrement is ejected, and around which the resinous sap exuding from the wound forms a thick lump with the round hole through it. The pupa state is assumed in the centre shoot, but when the moth is ready to emerge the pupa works its way down the passage and out through the resinous tube, till it hangs free all but the last segment or two, which retain a hold in the passage, so that the moth, when it emerges, has no need to touch the resin, to which it might otherwise adhere. Before this, however, the circle of shoots has begun to grow, leaving in the centre the dead one, forming a natural conical cocoon, and this seems to betray the whereabouts of the pupa

When this is broken off the pupa, if there be one, will be visible, as it hardly forms any web, and fills the space in the shoot; but if, as is more often the case, the arva has been destroyed by an ichneumon, a flat, pellucid membrane will be visible nside the shoot, and within this the ichneumon pupa lies. After working wherewer I could find young firs for three weeks, with various success, finding few pupe and many ichneumons, with occasionally a larva different from the ordinary ones, chanced, on May 1st, to find a pupa in a side shoot (one of the circle), and by lose searching procured one or two more. These were light brown pupæ (those f twionana being dark brown), and instead of lying in the shoot with the head ownwards, were in the reverse position, the head being towards the tip of the hoot, the hard inside of which had been carefully gnawed away, leaving a passage of escape for the moth, but safely closed from any intruder by the natural bracts. From these, in the middle of May, I bred Retinia pinivorana; turionana having temmenced to emerge a fortnight earlier.

In the meantime the larvæ collected first had been feeding voraciously, reniring plenty of fresh food, but at the same time being very restless, and had own most of them spun up; and, to my great surprise, I bred from them nearly wenty pinivorana. Thus I had accidentally hit upon both the larva and the habits the pupa of this species. Supposing the larva to be Buoliana, I did not take any escription, but they were dark red or liver coloured, and, if I recollect right, ithout markings, but with the ordinary brown head and plate.

My good fortune did not end here, for on June 26th a pinicolana emerged, and July two of Phycis abietella. This last must, I think, have been produced from pale grey larva with darker longitudinal stripes, and I think a few short scattered tirs, which had rather a different form to the other larvæ; but as it fed in the loots in the same way, I had concluded it to belong to an allied species.

The only other insect that I bred from this lot of fir-shoots was Sericoris ticana!! Polyphagous as the larva is, I did not expect it from such a pabulum this.—Chas. G. Barrett, Haslemere, 16th September, 1868.

# Rebiews.

THE RECORD OF ZOOLOGICAL LITERATURE, vol. iv.; part 2, Arachnida, Myriapoda, secta; by W. S. Dallas, F.L.S. London: John Van Voorst, 1868.

The hopes we previously expressed that this elaborate Record would be divided to sections, so as to enable students of one branch of Natural History to know that their fellow-workers were doing without having to pay for a bulky volume, considerable portion of which would be useless to them, have been realized, and a portion recording the work done in the above-mentioned classes during 1867 in now be had separately, as can the two others concerning the Vertebrate, astacea, and lower animals respectively. As it is, the present part extends to pages, almost totally occupied by the Insecta. We feel sure that entomologists I duly appreciate the boon accorded to them. It may be worthy of consideration ether the size and price might not yet be much reduced with advantage, omitting the brief abstract of the characters of the new genera. It suffers that a worker at any order or family should know what has been done, and are to find the special paper he may require: moreover, as it is impossible that a man can duly appreciate the relative value of characters in all orders of insects,

180 (December,

so we find occasionally that in the condensed diagnoses given in the Record, the most important points are omitted, and undue prominence given to minor characteristics. We throw this out as a hint, knowing at the same time that Mr. Dallas performs an Herculean labour in a most conscientious and able manner.

THE BUTTERFLIES OF NORTH AMERICA; by WM. H. EDWARDS. The American Entomological Society, Philadelphia. London: Trubner & Co. 4to.

At page 79 we had occasion to notice the first part of this magnificent publication. We have now received the second part, which, for beauty of the figures, and letter-press replete with information, fully sustains the favourable idea we had previously expressed. The five plates are occupied by figures of Argynnis 2 sp., Colias 4 sp., and Apatura 1 sp. Perhaps the most curious of all is the little Colias Behrii from the Yo Semite Mountains at an elevation of 10,000 feet; it belongs to the dusky-green group of the genus, peculiar to northern and Alpine regions. If the author continue to maintain the same excellence of description, and fidelity of illustration, any further recommendation we can give him will be superfluous.

Entomological Society of London, 2nd November, 1868.—H. W. Bates, Esq., F.Z.S., President, in the Chair.

Mr. Stevens exhibited an example of Charcampa Celerio captured by Mr. Swaysland at Brighton on the 21st of September last; and an insect from the late Mr. Desvignes' Cabinet, which was probably a var. of Strenia clathrata.

The President exhibited dwarfed specimens of Vanessa urtice and Anthrocera filipendulæ from the Isle of Man, where these forms appeared to be the ordinary condition of the insect, at any rate during the last season. They were sent by Mr. Birchall, who communicated notes on the subject.

Mr. John Wilson, R.A., of Woolwich, sent a note respecting a gynandromorphorus example of Lasiocampa quercus; left side  $\mathcal{E}$ , right side  $\mathcal{C}$ .

Mr. Briggs exhibited a *Leucania* captured at sugar at Folkestone on the 15th August; another having been found, much worn, in October (since identified as *L. albipuncta*, W. V., and new to this country; a species more common in France than *lithargyria*, to which it is closely allied).

Mr. Pryer exhibited Scoparia Zelleri captured at Norwood, and Agrypnia picta captured at Highgate, both new to Britain.

Mr. Mosse exhibited a collection of insects from New York.

Mr. Roland Trimen sent, from the Cape of Good Hope, drawings of an extraordinary orthopterous insect, apparently pertaining to Gray's genus Anostostoma. He also sent a paper containing remarks on certain South African Satyrida, with reference to their position and synonymy in Mr. Butler's recently-published Catalogue of Satyrida.

Mr. Fereday, of New Zealand, sent a communication soliciting duplicates of British Insects for the Museum at Christchurch, Canterbury, N. Z.

Mr. Müller sent a letter requesting information respecting British galls; ha and Mr. H. W. Kidd being engaged on a work on the subject.

Mr. F. Bates communicated "Descriptions of New Genera and Species of Heteromera."

Mr. McLachlan read "Contributions to a knowledge of European Trichopters (part 1)."

Acanthosoma hamorrhoidalis or hamorrhoidale? with a word or two on the perpetuation of blunders in nomenclature.—At the last meeting of the Entomological Society, I had the pleasure of reading a paper written by my colleague in the Secretaryship. When I came to the genus Sericostoma, my memory recalled a vigorous passage on the gender of Acanthosoma (Ent. Mo. Mag. iv, 260), and it was only after a timorous glance round the room had convinced me of the absence of the Rev. T. A. Marshall that I dared to give utterance to the name Sericostoma Carinthiacum.

When my friend's "few words on bad spelling" were published in the Magazine for April and May last, I was prevented by the pressure of other matters from adding a few words of my own. If not too late, I should like to do so now.

I may remark that Mr. Marshall has given to his papers a title too restricted; the range and scope of his criticisms extend far beyond "bad spelling;" many of the "flagrant instances of cacography\* in names" which he adduces are incurable malformations, which must be either retained or rejected, but cannot be amended. The spelling of a mis-spelt name may be corrected, but it remains the same name; reform a malformation, and you make in fact a new name.

(1) I agree that "the ill-used letter H might be easily reinstated in such words as Abrostola and Yponomeuta," and ought to be. In the "Accentuated List of British Lepidoptera" published in 1858 by the Entomological Societies of Oxford and Cambridge, Mr. Marshall will find Habrostola, Hyponomeuta, Hypsippetes, &c.

Suppose that, at a meeting of our Society, Mr. Dash were to announce that on a recent visit to 'Ampstead 'Eath he had caught a new 'Ighflyer, which he ntended to describe as 'Ypsipetes' Ampsteadiensis. I not only deny Mr. Dash's right to bind me by his pronunciation, but I think it would be within my duty if, before leaving Burlington House, I caused search to be made on the floor for the thropped H's, and announced the new Highflyer in the "Proceedings" as Hampteadiensis. And if, instead of a verbal announcement, Mr. Dash had sent to a Magazine a description of 'Ampsteadiensis, and the Editors (omitting to sweep the carpet) had published it, I deny the right of Mr. Dash (either with or without the Editors thrown in) to bind me by his spelling. But unless Mr. Dash bas the right o bind me throughout all time, both in writing and speaking, to drop the H of Mampsteadiensis, why should he have the right to bind me to drop the H of Hypsipetes?

(2) Again, I agree that "printer's errors might be rectified," and ought to be. For instance, (Bucculatrix) frangulella, so named by Goetze because the larva ceds on the alder buckthorn (Rhamnus frangula), was first published as frangulella. In absurdity much further go than to ask us to perpetuate a misprint like this? Yet was years before the Historian of the Tineina could be induced to abandon it; and there are still some who cling to the t. What would these gentry have done the printer had made it frangulella?

In the "Accentuated List" Mr. Marshall will find Argyrotoxa. Argyrotoxa, owever, was not a printer's but an author's error. Stephens made the same sub-itution of x for x in other cases, e. g., Lozotænia, in each instance giving correctly

Qu. Is not "calligraphy" usually taken to mean good writing in the sense of good penmanship?
 di"casography," I presume is the opposite of calligraphy. But the opposite of "orthography" is re intended.

182 (December,

the Greek word which he professed to be Latinizing. The unfortunate similarity, in many founts of type, of the diphthongs x and x leads to constant confusion. And nomenclators occasionally forget that the Greek x is represented in Latin by the dipthong x, and the Greek x is x thus we have Cinophila where we ought to have Cinophila. Mistakes like these ought, in my opinion, to be rectified. And it may be worth while to add that I regard it as perfectly proper to cite Cinophila and Cinophila of Stephens.

- (3) Mistakes in the spelling of proper names are not uncommon—sometimes the printer, sometimes the author himself, is at fault. Example, Stigmodera Yarelli, Lap. and Gory, for Yarrellii. In a note at p. 32 of Trans. Ent. Soc., 1868, I have sufficiently indicated my opinion as to the retention of blunders like this.
- (4) But some Medes and Persians are so enamoured of the "law of priority" that they will not even permit an author to correct his own mistakes. It is only on this hypothesis that the retention of Psocus can be supported; since Latreille, who published Psocus in 1794, himself gave the correct form Psochus in 1796. Here, again, I should like to ask what must have been done if the printer, instead of dropping out the h, had omitted (say) the o, thereby reducing the name to Pschus? Must Latreille, and all the world besides, have for ever continued to sputter over the genus Pschus?
- (5) "Lastly (says Mr. Marshall) a vicious practice has been imported from the Continent, and is daily gaining ground. It is that of making genera which end in TOMA, OMA, or -SOMA, neuter, instead of feminine. This extraordinary and illogical vagary seems founded on some confused notion that all Greek words ending in -OMA must be neuter because SOMA is so. It seems necessary to point out that the gender of the different nouns forming a compound can have no influence on the gender of the compound when formed. The latter depends for gender on its own termination, and nothing more. [And is moreover supposed to be Latin, whatever its derivation.—Eds.] Acanthosoma is feminine by the form of the word, irrespective of the gender of Acantha or Soma; to make it neuter is to misunderstand the use of words. It would not be more ludicrous to argue that a carriage must be feminine, because it has a lady inside. Nevertheless a German illuminato has gravely propounded this rule, and by way of correction, as a legitimate principle in nomenclature." (Ent. Mo. Mag. iv, p. 260).

En passant, the neutrification of Acanthosoma has nothing to do with "bad spelling."

I may observe that in the aforesaid "Accentuated List" we did not alter, from feminine to neuter, the gender of such generic names as these, but retained Diplodoma marginipunctella, Dasystoma salicella, Homæosoma nebulella, &c. On the other hand, in the 3rd series of the Trans. Ent. Soc., there are many such forms treated as of the neuter gender, and I have not attempted to induce the authors to make them feminine. Hitherto, then, I have been indifferent on the point, or perhaps I ought to say, passively, if not actively, inconsistent. But now that the question has been so pointedly raised by Mr. Marshall, I feel compelled to throw off my indifference, and range myself on one side or the other.

The question does not appear to me so simple as Mr. Marshall seems to think; and though I can quite understand my friend's view, I see nothing ludicrous in that of the "German illuminato." I should like to hear the said German argue the point; failing that, I will (for the sake of ventilating the subject) try to place myself in his position.

So far as I am aware, the practice of making "genera which end in -toma, or -soma, neuter" has been applied only in cases where the name of the genus is a compound of two Greek words of which the latter is a noun substantive of neuter gender; as Ortho-stoma, Diplo-doma, Acantho-soma. This is the case which I propose now to consider, leaving those (if any) who hold the "confused notion" above mentioned to defend their own "vicious practice" and "illogical yagary."

What then is, or ought to be, the gender of Acanthosoma?

The proposition that "the gender of the different nouns forming a compound can have no influence on the gender of the compound when formed; the latter depends for gender on its own termination, and nothing more," is stated too broadly, as shown by Mr. Marshall himself, in the note at p. 281, where he says "DIPSOCORIS=thirst-bug; a compound noun substantive, which, therefore, must have some gender or other; it takes its gender from the subject (bug) . . . . the word involves both subject and predicate; the subject is a bug, whereof it is predicated that he is thirsty." It is clear, then, that where the subject is expressed, the gender of that subject not only has influence on, but determines, the gender of the compound.

But Mr. Marshall distinguishes Acanthosoma from Dipsocoris on the ground that "in Acanthosoma the subject is not contained, but understood. Acanthosoma spiny-bodied; a compound noun adjective, agreeing with some substantive understood, or supposed to be understood, and in this instance, from the termination, supposed to be feminine. Of this subject it is predicated that it has a spiny body. Body is not the subject, but part of the predicate."

In other words—a name which denotes what a thing is, is a noun substantive; a name which denotes what a thing has, some property or quality which it possesses, is a noun adjective.

But is this necessarily and universally so? A "blackbird" is so called because it is a black bird; a "redbreast" is so called because it has a red breast; a "wagtail" because it has a tail and wags it. Are not "redbreast" and "wagtail" as much nouns substantive as "blackbird?" May not Acanthosoma be a substantive, just as much as Dipsocoris?

The real question is this-Is Acanthosoma an adjective or a substantive?

That it may be an adjective I do not deny. Such forms as disomos and megalosomos (for disomatos and megalosomatos) occur in some late Greek writers, and there is good authority for distomos and megalostomos. By analogy we have acanthosomos, and, Latinizing this, we obtain acanthosomus, -a, -um, as an adjective express "spine-bodied." [Spine-bodied, not spiny-bodied; spinicorpus, not spinosicorpus. I apprehend that, properly, Acanthosomus means "having a body like a spine," or "spine-shaped"—not "spiny," or "covered with spines."]

But conceding that Acanthosoma may be an adjective, does it follow that it must be?

Why may I not say "ACANTHOSOMA = spine-body, a compound noun substantive, which, therefore, must have some gender or other" of its own?

When, as in the days of Moses Harris, Papilio Machaon and Anthocharis Cardamines were called respectively "the swallow-tailed" and "the orange-tipped," their vernacular names were "compound nouns adjective, agreeing with some substantive understood." But surely "swallow-tail" and "orange-tip," "blue-bottle," "cow-lady," and "lady-bird," are themselves nouns substantive. 184 [December,

It cannot be said that the Greek language does not recognize compound nouns substantive. And if it be wished to form in Greek the compound substantive corresponding to the English spine-body, what would it be, if not Acanthosoma?

Is there any reason why a compound noun substantive may not be taken for the name of a genus, when a simple noun substantive may? If *Harma* will do, why not *Chalcarma*? If *Phasma*, why not *Neophasma*?

The word Trigonaspis may be either a substantive (a triangular shield), or it may be an adjective denoting the possession of a triangular shield. The mere compounding of trigonos with aspis does not make the compound trigonaspis an adjective any more than compounding "long" and "bow" makes "longbow" an adjective. Trigonaspis is as good a substantive as Aspis, Micrornia as good as Ornia.

If Micrornix had been applied to a genus of birds, Mr. Marshall's Dipsocoris argument would have run thus:—"Micrornix = little-bird, a compound noun substantive, which, therefore, must have some gender or other; it takes its gender from the subject (bird); the word involves both subject and predicate; the subject is a bird, whereof it is predicated that it is little." If, instead of a genus of birds, the name were given to a genus of moths—as, in fact, the name Ornix has been—then, as a moth is not a bird, the argument would be that "in Micrornix the subject is not contained, but understood; of this subject it is predicated that it is like a little bird; bird is not the subject, but part of the predicate." The result is, that as the name of a bird Micrornix is a substantive, with a gender of its own—as the name of a moth, Micrornix is an adjective, depending for its gender on some imaginary substantive understood!

Suppose that instead of compounding acantha and soma, the author had formed his name from acantha and thorax. Adopting the same mode of composition as in Acanthosoma, we obtain Acanthothorax. By a similar process we have Uropteryx.

The three genders of the adjectives Acanthothorax and Uropteryx would be identical. Whatever, then, "the substantive understood, or supposed to be understood," might be, whether masculine, feminine, or neuter, the name of the genus would still remain Acanthothorax or Uropteryx. The founder of Acanthothorax might understand a feminine substantive, and make the name feminine; the founder of Uropteryx might have understood a masculine substantive, and made the name masculine. Would Mr. Marshall allow Acanthothorax spinosa or Uropteryx sambucarius to stand? If not, why not? If he would, he must equally allow Spilothorax punctatum and Micropteryx purpurellum. We should then have three genera, say, Ceratothorax masculine, Acanthothorax feminine, and Spilothorax neuter; and in like manner with the compounds of pteryx. Nay, further, we might have all three genders in the same genus. A., an author of a masculine turn of mind, might call his species Acanthothorax niger; B., more partial to the feminine gender, might insist upon naming another species Acanthothorax alba; whilst C., an epicene, might have a preference for Acanthothorax rufum. And if this noun-adjective principle of the gender being "dependent on the termination and nothing more" be sustainable, no one of the trio can say that either of the other two is wrong.

Is not Acanthothorax a noun substantive of masculine gender, and masculine because thorax is masculine? Uropteryx a noun substantive of feminine gender, and feminine because pteryx is feminine? Acanthosoma a noun substantive of neuter gender, and neuter because soma is neuter?

1868.]

Mr. Marshall is careful to point out (p. 282) that Harma, as a generic name, is neuter; the only reason being that the Greek noun substantive harma is neuter.\* If any one were to take Soma for the name of a genus, this, by parity of reasoning, would be neuter. If Soma is properly made neuter, why is Acanthosoma to be nade feminine? Is not Chalcarma of the same gender as Harma?

To Mr. Marshall's assertion that the compound depends for gender on its own ermination and nothing more, the Editors of the Magazine add the further argument that the word is "supposed to be Latin, whatever its derivation." Admitted—but what then? The name Harma is supposed to be Latin. Do the Editors wish o argue that Harma should be feminine? If so, I leave them for the present o settle their little difference with Mr. Marshall. In fact, the suggestion of the Editors leaves the question precisely where it was; for if Acanthosoma e a substantive, the termination does not decide its gender; I need scarcely emind the Editors that there are plenty of Latin substantives ending in -a which are masculine, and plenty which are neuter. Acanthosoma as a Greek oun substantive would undoubtedly be neuter; and if that word had been adopted a Latin, the neuter gender would have been retained. Just as we have £nigma a,), gen. emigmatis; phasma (n.), -atis; psalma (n.), -atis; so we should have canthosoma (n.), gen. Acanthosomatis.

On the adjectival hypothesis, we are bound to make the genitive case Acanthomax; but I presume Mr. Marshall would say Harma, gen. Harmatis. I see that
tp. 274 of the Magazine he sends glechomæ of Linné to the right about, and
roperly writes Aulan glechomatis. If, then, there were an Acanthosoma which
feeted the plant Glechoma, Mr. Marshall must make the genitive case of its name
by be Acanthosomæ Glechomatis.

I have purposely omitted any discussion of the "carriage with the lady inside." at so far from seeing anything "Indicrous," "illogical," or indicative of "misun-perstanding the use of words" in making this name neuter, I must confess that conthosoma, as a Latinized word of Greek origin, a noun substantive of the third celension and of neuter gender, a term absolute, not depending on any other word aderstood, seems to me admissible; and if the matter were res integra, and we have now beginning our nomenclature, I should not hesitate (as at present advised) to loop the neuter substantive in preference to the feminine adjective; though I beg reserve to myself the fullest right to go over to the feminine camp when I have and Mr. Marshall in reply.

My present impression is that Acanthosoma, as the name of a genus of bugs, as be deemed to be either an adjective or a substantive, may be made either minine or neuter—that either of the opposing views is rational, neither of them dicrous. It may be that in the existing state of nomenclature, expediency and balance of convenience are in favour of the retention of Acanthosoma, fem. en. case, Acanthosoma, Fam. Acanthosomida), and the rejection of Acanthosoma, ut. (gen. case, Acanthosomatis, Fam. Acanthosomatida); at all events, it is desirable at there should be uniformity in the practice.

(6.) To pass now to Mr. Marshall's "further words" (vol. iv, p. 280), I find ne difficulty in discovering, and I hope we shall be further informed, how far my

<sup>\*</sup> For the purpose of this argument I adopt Mr. Marshall's suggestion that the genus Arma of Hahn that to be written Harma. I do not find that Hahn himself professes to derive the name from harma, do I know on what ground Mr. Marshall adopts this derivation. It is not justifiable to impute or on conjecture, if any explanation not involving error is forthcoming. If Arma can be explained, ought not to resort to Harma; and at least two derivations may be suggested for Arma without H.

186 [December,

friend desires to go in altering names that are already current. Viewed as canons for future guidance, I agree in the main with Mr. Marshall's propositions; but framing rules for future nomenclators, and applying those rules retrospectively to established names, are very different matters. I desire to see scientific nomenclature scientifically constructed, and think that enough has already been said to show that I am not bigottedly conservative of blunders, however venerable from antiquity; at the same time, considerations of convenience render me averse to making alterations in some, at least, of the instances classified by Mr. Marshall. Take his first class of "barbarism"-words without meaning, or formed from Chinese, Sanskrit, Hebrew, and Arabic roots. These are said to be incurable. Is it, then, proposed to root them out? Though not enamoured of such names, I am scarcely prepared for their wholesale excision from our Lists. True, it is difficult to say where we must stop; if we admit Chinese and Hebrew, why not Zulu? or even American? I have some recollection of having seen printed descriptions of beetles under the specific names of "Copper-head" and "Know-nothing!" Not long ago I read in this Magazine, (iv, 246) a description of an Aulocera Werang; the context showed that Werang is the name of an Indian mountain-pass where the butterfly had been captured. What would be thought of a Papilio Hammersmith, a Pieris Mont-Blanc, or a Polyommatus Jungfrau? A few years ago certain French authors gave such names as Cetonia Hope, Lomaptera Latreille, Gnathocera Macleay; but subsequent writers have properly converted these into Hopii, Latreillii, Macleaii [N.B. Not Hopei, &c.], and this seems to point out the appropriate mode of treatment for the Werangs, whose nakedness should at least be clothed in a garb of mediæval Latinity.

- (7.) Again, take Mr. Marshall's 6th class. "Compounds of two nouns, in which the subject is placed first, and the subordinate idea last, thereby destroying the sense. Let any one try this inversion upon the English compounds London-Bridge, watch-pocket, black-beetle, &c., and the result will be similar to that of Corimelæna for Melanocoris, Derephysia for Physodera." Is the "destruction of the sense" by inverting "river-horse" into "horse-river" sufficient to induce us to abandon hippopotamus? Is rhinoceros to be turned into ceratorhinus? To substitute Physodera for Derephysia is to make a new name, not to correct the spelling of the old one.
- (8.) As to the 7th class, perhaps a little more explanation is requisite, lest it should be supposed that Mr. Marshall had laid it down that every compound of two Greek nouns is barbarous unless the two are connected by the letter O. It might be well to point out the distinction between Acetropis, Gonianotus, &c, and such existing Greek forms as Oidipous, Calliope, calligraphos, andrapodon, sciagraphos, acesphoros, aspidephoros, sagephoros, &c.
- (9.) Again, Mr. Marshall says "Eliodes should be Elioides; the termination -odes means 'full of;' similarity is expressed by -oides." But surely the termination -odes (with omega) not unfrequently expresses similarity, being in fact nothing but a contraction of -oeides (with omicron). Thus isthmodes, cunodes, cuclodes, sphecodes, chalcodes = isthmoeides, &c.; and such instances, occurring in classical authors of repute, if not worthy of imitation, seem to me sufficient warrant for allowing Eliodes to stand.
- But I fear my discursive remarks are running to too great a length; they should have been shorter had I had more time.—J. W. Dunning, 24, Old Buildings, Lincoln's Inn, 13th November, 1868.

AYCENA MEDON (AGESTIS) AND ARTAXERXES, ARE THEY DISTINCT?

BY PROF. P. C. ZELLER.

(Translated and extracted from the "Stettiner Ent. Zeitung," 1868, pp. 401-405.

Englishmen consider it as now proved,\* and Staudinger in his atalogue follows their precedent, that Artaxerxes is only a variety of Medon, the transition to which is formed by Salmacis, Steph. That he latter belongs to Medon cannot be doubted; but the former does ot yet seem to me so sure as not to necessitate confirmatory experinents. What probably constitutes the rule with Salmacis, namely, nat white scales border the black median spot of the fore-wings on oth sides, I notice only in some specimens of Medon from the South Europe and Asia Minor, where it is more or less finished on the inner de by a few white scales. But that, as in Artaxerxes, the whole ack spot should be missing, and the white scales so much increased stead, as to form a white oval spot, has probably nowhere been served on the continent. The natural history of Artaxerxes is, all events, well known to Englishmen. Stainton writes (Manual, 62)-" Larva pale bluish-green, with a green dorsal line and a nkish lateral one; head glossy black. On Helianthemum vulgare in ay; time of appearance of imago June and July." I doubt not but at in some one of the many English publications, which I am sorry say are mostly unknown and unused on the continent, the natural story is given at length. The same is no doubt the case with Medon; r, if the description of its larva taken from Westwood, and in the anual,-"green, with a pale angular dorsal row of patches, and a llow-brownish dorsal line,"-should still be considered as correct, it not to be understood how people in England could have their doubts out the most complete specific difference between Medon and Artarxes. The natural history of our common Medon I have carefully served from the egg, and described in the Ent. Mo. Mag., vol. iv., . 73-77. I therefore mention here only the following. Stainton s indicated the correct food-plant, but the full-grown larva must be as described: -- "Lively pale green, finely white-haired; the head ck; the dorsal line purplish-brown; with two very pale green lique lateral lines, and broad purplish-red lateral swellings."

It is owing to the kindness of my friend, Mr. Henry Doubleday, of ping, that I have become acquainted with the caterpillar of Artaxes in nature; I got from him four larvæ, which, after having probably

<sup>\*</sup> In Stainton's Manual I. (1857) L. Agestis (Medon) and Artaxerxes were still kept separate.

188 (January,

first made the journey from Edinburgh to Epping,\* arrived on the 16th May safely at Meseritz. The indications of "frass" showed that a few had partaken of food on the way. On the fresh food, which I secured on the very day of their arrival, no trace of "frass" could be observed, and yet one of them could not have been quite full grown, as it only became a pupa on the 29th May. Can it have disliked the Helianthemum grown on a sandy loam, and not on limestone?

The first turned to pupa the afternoon following its arrival; it did not fix itself by a thread, neither did the following ones; but the fourth fixed itself in a corner of the box with a weak thread round the middle of the body. So it sat quite still, having become of an unicolourous pale green, with apparently very deep-lying dorsal vessel. Each of the four pupe had the hinder extremity inserted in the cast-off larva-skin, which had become pale greyish-yellow, with yellowish bristles.

The caterpillars are pale green, and amply covered with whitish bristles. The dorsal vessel forms a considerably broad longitudinal line, dark green, narrowed in the segments, fading away before the end of the anal shield; which line is laterally accompanied on each segment by a swollen hump, apparently more thickly bristled. The lateral swelling, deeply notched behind each segment, has a reddishwhite line, running lengthways, bordered on both sides with dark rose colour, making the colour of the whole lateral swelling appear rose colour when superficially viewed. This colour does not reach round the anal shield, nor does it extend to the thoracic segments. Between it and the dorsal swellings pale faint lines descend from above obliquely downwards and backwards. The ventral legs are somewhat paler than the ground colour of the body; the anterior legs are yellowish-brown, their tips quite pale. The pupa is slightly polished pale green, on the back darker and purer; on the abdomen paler, and shading into vellowish, on the wing-covers into whitish. The abdomen shows very slender small yellowish bristles sparsely scattered; on the face they are somewhat longer, straight, and stiff; on the neck shorter, and much sparser. Over each eye a blackish streak, curved backwards, ranges from the upper border to the lower one. The dorsal vessel, only visible on the abdomen, is dark grey, widened on each segment in the middle, but it is not visible either on the first or last segment. The lateral swelling of the abdomen, which disappears under the wingcases, is very pale rose colour. Above it the spiracles appear as small whitish raised dots.

<sup>\*</sup> We believe these larvæ were forwarded from Scotland by Mr. Andrew Wilson, of Edinburgh.-Ens.

During the development of the butterflies the wing-covers became at first whitish, and not transparent, and the eyes dark. On the third lay before the last the thorax became of a brown colour, the wingases and the abdomen pale dirty yellow. Over the brown eyes the he darker curved streak was still visible. The leg and wing-cases ad each received a broad longitudinal line, and the tips of the anennæ showed themselves as two brown, elongated, longly-elliptical, mall spots, between the ends of the wing-cases. On the day before he last the wings and the end of the abdomen had taken a brown olour.\* The first butterfly (a female) appeared on the 31st May. according to the time of extrusion of these four specimens, the uration of the pupal state of the first generation (if there be a econd) is 12-14 days. The butterflies (2 &, 2 2) were true Artaerxes. Only, one of the males had on the upper-side of the fore-wing, istead of the white spot, nothing but a very small whitish dot, scarcely erceptible, but, like the others, no trace of the black mark always resent in Medon.

If I now compare the descriptions of the larvæ of *Medon* and *traxerxes*, made after a number of specimens, the difference in the blour of the dorsal stripe is first noticeable; purple-brown in *Medon*, ark green in *Artaxerxes*; and in the latter it is even differently formed, at least, I find in my memoranda about *Medon* nothing mentioned bout a narrowing of the same in the segments.

But this being a difference of colouring, I lay no stress upon any more than upon the colour of the lateral swelling, which in the don is simply purplish-red throughout, instead of being lighter in the middle, as in Artaxerxes. The difference in the build, and in the abescence of the swellings, is much more important. It is said of the don, that those (swellings) situated near the dorsal stripe bear timerous bristles of unequal length; of Artaxerxes, that they have ally apparently thicker bristles than the rest of the body. I am sorry at, relying upon the exactness of my last year's description of Medon two, I have not drawn up that of Artaxerxes, with my notes upon the former before me, and that, therefore, to make quite sure, new scriptions will have to be taken.

I therefore omit to point out also the other small differences, nich perhaps lie more in the words than in the reality. But supposing at both larvæ are built quite alike, and that the colour of the dorsal

<sup>\*</sup> The larva and pupa of Artaxerxes were described by Mr. Buckler in our last number (p. 176) in usual careful manner, but we insert Prof. Zeller's description for the sake of comparison; it will be erred that the two agree in all important points, the differences being more those of words than of lity.—Ens.

190 [January,

stripes and the lateral swellings is changeable; that, further, a gradual transition can be put together in the imagos, from the true Artaxerxes to the Medon of the continent, then full certainty can only be obtained through breeding from the egg.

The Helianthemum, as food of the larva, no doubt produces L. Artaxerxes, the Erodium (in southern countries, besides cicutarium, certainly also other species), L. Medon. That the latter does not lay her eggs with us on Helianthemum, I may assert as certain; and there is every probability that Artaxerxes does not select Erodium.

But we have a right to expect that, if the young larvæ, from the egg forward, accommodate themselves to one or another food unusual to them, their butterflies will also take the distinctions (or, to allow its right to the influence of the climate, at least some of them) of the species living upon that food-plant, thus establishing the proof of being the same. Whether Artaxerxes appears in a second brood, as it ought to do if it form the same species with Medon, I do not find indicated. As hybernation (according to my observations on Medon) is not at all easy, it will be best to choose the summer brood for this experiment. The females of the Diurnæ like best to lay their eggs in the hours of the forenoon. Where this has been observed, nothing is wanted but to cut carefully a few days later all the plants near the spots, and to shake them over a white cloth, so as to secure the number of larvæ wanted.

If the result answer my expectations, the *Medon* larvæ will all prefer to die of hunger rather than accept the *Helianthemum*; which means that *Artaxerxes* will turn out to be a species different from *Medon*, however much their larvæ may resemble each other in build, pubescence, and colouring.

## ON THE EUROPEAN SPECIES OF SYRPHUS ALLIED TO S. RIBESII. BY G. H. VERRALL.

The "ribesii"-group of the genus Syrphus contains several species, which, though closely allied, afford nearly always, when carefully examined, good tangible points of distinction. By this group I mean those species which have the eyes bare, and the abdomen elliptical (that is, broadest in the middle) with at least three bands, of which only the first is in either sex separated into distinct spots. The male of Scorolla approaches this group, as the spots on the abdomen of that are frequently strung together, but in the female they are always decidedly separate. The group is most widely distributed, ribesii itself being

said to occur in Europe, Asia, Africa, and America. There are about a dozen European species, of which only three, grossularia, ribesii, and pitripennis, are recorded as British in Walker's Diptera Britannica; Stephens and Curtis, in their catalogues, mention a fourth, nitidicollis, which I reinstated in the June number of this Magazine for last year, and I have now to add a fifth in latifusciatus, and perhaps a sixth in nitens. Most, if not all, of the rest may be expected to occur in the British Isles. The European species are—

- l. Lineola, Zetterstedt, Dipt. Skan., ii, 714, 16 (1843).
- 2. Vittiger, Zetterstedt, loc. cit., 714, 17 (1843).

These two may be distinguished from all the rest by their black epistomal middle line; lineola has a darker stigma and duller thorax than vittiger. Zetterstedt and Schiner record lineola as widely distributed in Skandinavia, and rare in Austria, while vittiger is the rarer in Skandinavia, and the commoner in Austria.

- known by its entirely black antennæ, dull coloured thorax, wholly yellow epistoma, and completely entire abdominal bands, without the trace of a notch. The base of the femora and the coxæ being black, distinguish it from its nearest ally diaphanus. It is found uncommonly over nearly all Europe. Walker records it as British, but only says "Rare; in Mr. Saunders' collection (E. S. I.)." I have seen one female specimen, probably from Sussex, but the usual British representatives are only large ribesii.
- Diaphanus, Zetterstedt, Dipt. Skan., ii, 711, 12 (1843). Distinguished from the preceding by its smaller size, yellow front, and entirely yellow legs in the female, and with only the coxe dark in the male. It is found rarely in Sweden and Austria, and probably over all central Europe, though generally in single specimens.
  - Ribesii, Linné, Fauna Suecica, 1816 (1761). This is probably the commonest species of the genus throughout Europe; it may be known by its entirely yellow epistoma, dull thorax, antennæ with the third joint pa'e beneath, scutellum clothed with mostly dark hairs, and slightly emarginate abdominal bands. There may be two species still under this, as specimens collected in large woods may nearly always be distinguished at a glance from those collected in gardens, by their darker and more compact appearance. Common throughout England.
- Vitripennis, Meigen, Sys. Bes., iii, 308, 50 (1822). I must say, 1

cannot satisfactorily distinguish this from the preceding; all authors seem to say it may be a variety of it, but are not sufficiently satisfied in their own minds to unite them. The distinctions most insisted upon are the smaller size, more pellucid wings, and blacker femora; but they vary much in the femora, and I have specimens fully as large as ribesii with wholly pellucid wings, and others smaller than the general run of vitripennis with dark wings. I hope, however, next summer to come to some conclusion concerning the variations of this and the preceding species. Zetterstedt says himself (Dipt. Skan., ii, 708) that the confinis described by him in the Ins. Lapp., 602, 15, is only a variety of this, rather larger and with darker antennæ. It is more common than ribesii in gardens, but perhaps less so in woods and open country.

- 7. Nitidicollis, Meigen, Sys. Bes., iii, 308, 51 (1822). This species may be known from the four preceding by its brightly shining thorax. The epistoma has also the cheeks more or less dark. The scutellum being clothed with dark hairs separates it from ochrostoma, melanostoma, and latifasciatus. For its distinction from nigritarsis and nitens, see the notes upon those species (Nos. 11 and 12). It occurs sparingly probably over all Europe, never seeming to be abundant. It has occurred not rarely at Darenth Wood, and occasionally in Sussex, and even here (Denmark Hill) almost in London.
- 8. Ochrostoma, Zetterstedt, Dipt. Skan., viii, 3133, 12, 13 (1849). This may be distinguished from all the preceding by its yellow-haired scutellum. It has also the whole epistoma yellow, which distinguishes it from its nearest ally nitidicollis, and from all the following species. It is found very rarely in Northern and Alpine districts.
- 9. Melanostoma, Zetterstedt, Dipt. Skan., ii, 711, 13 (1843). This is allied to the two preceding species, but may be distinguished by its yellow-haired scutellum and black cheeks and peristoma. It is separated from latifasciatus by its abdominal bands being straight behind instead of notched. It is found in similar situations to the last, also rarely.
- 10. Latifasciatus, Macquart, Dipt. du Nord de France, 94, 28 & (1827). This species was described as affinis by Loew in the Isis for 1840, and in 1849 the male was again described by Zetterstedt as excisus, and the female as abbreviatus.\* The latifasciatus of Macquart has hitherto been considered a doubtful synonym of corollæ, but the

<sup>\*</sup> And also by Rondani (Dip. Prod. ii, 153), in 1857, as flaviceps.-G. H. V.

869.;

wording of his original description "abdomen à trois bandes jaunes, "fort larges-la deuxième sans echancrure antérieurement (mâle)-"Epistome d'un jaune luisant, bord anterieur de la bouche noir-"troisième et quatrième (segments de l'abdomen) à bande très "large, atteignant les côtés près du bord anterieur, légèrement "échancrée du côté posterieur-ventre à bords des segments et "taches transversales noirâtres. Pieds fauves; hanches et base "des cuisses noires," is I consider quite conclusive as to the identity of his species: he says it may be the male of topiarius, but the words "yeux nus" render that impossible. The reinstation of this name will also improve a doubtful piece of synonymy, as Fabricius in the Ent. Syst. described a Syrphus affinis, which, however, is a Phasia (Muscidæ); and, in consequence of that, Schiner rejects Loew's name, adopting Zetterstedt's name excisus for the male. The species may be known from its allies by its yellowhaired scutellum, black cheeks, and emarginate abdominal bands. I believe it is widely distributed, and common in England. I have captured it in two or three localities in Sussex, and also near Richmond. It is frequently to be noticed in British cabinets under the name of corollæ.

1. Nitens, Zetterstedt, Dipt. Skan., 712, 14 9 (1843). In the original description of this species, a single female only was described, which appeared to be very closely allied to nitidicollis, the only tangible distinctions then given being the rather smaller size and the much greater blackness of the femora. To this description was afterwards added (Dipt. Skan., viii, 3137), that the vertex is evidently narrower than in the allied species, and that the epistoma has a rudiment of a brown middle line; and a male was described, probably belonging to this species, concerning which it was stated that there are two oblique brown spots above the antennæ, and that the abdominal bands are rather undulated. The bright thorax and black-haired scutellum distinguish it from all but nitidicollis and nigritarsis. In August, 1866, I captured in Sussex a female very similar to nitidicollis, with the vertex very slightly narrower, with twe oblique brown spots above the antennæ, and with the abdominal bands distinctly undulated and much narrowed at their ends; the epistoma has a trace of a dark middle line, the wings are more pellucid, and the pubescence in general is darker, the black hairs predominating on the abdomen, and the four anterior femora are fringed with black hairs instead of all yellow, the abdomen is also broader. All these distinctions might show the spe194 (January,

cimen to be nitens, but it is scarcely smaller and has the femora quite as yellow as in nitidicollis; I have very little doubt, however, but that it is a female nitens. The species seems only to have been observed by Zetterstedt and Bonsdorff in the extreme north of Europe. This is most similar in appearance to latifasciatus, but may be known from that immediately by its black-haired scutellum.

12. Nigritarsis, Zetterstedt, Dipt., Skan., ii, 710, 11 (1843). This species differs from nitidicollis in the tarsi being wholly, and the femora for the basal third, black; the wings are more pellucid, the thorax not quite so bright, and the hinder tibiæ have a faint obscure ring. It differs from nitens in the broader abdominal bands, rather larger antennæ, black tarsi, &c. If distinct from nitidicollis, it is probably overlooked, as it is only recorded from the extreme north of Europe by Zetterstedt, Bonsdorff, and Malm.

I believe the above 12 species are all that have been recorded as European, the first ten are well known to Entomologists, the last two are probably overlooked. *Crenatus*, of Macquart (Dipt. du Nord de France, 95, 29) might at first be considered to belong to this group, but I believe it to be only a synonym of *corollæ*, as I have specimens of the latter agreeing exactly with Macquart's description.

In the previous descriptions the colour of the hairs is always, to a certain extent, yellow, so when I say that the scutellum is clothed with yellow hairs, I mean all yellow, and when I say black hairs, I mean some black, generally the majority, as the character is a very constant one.

The Mulberries, Denmark Hill, London, S. November, 1868.

### NOTE ON THE GENUS RYGMODUS, WHITE.\* BY CHAS. O. WATERHOUSE.

Having had occasion to examine the type specimens of the supposed Heteromerous genus Rygmodus† in the British Museum, I find that the position of the genus is with the Hydrobiidæ, having, I believe, all the characters of Hydrobius, except the simple claws; i. e., the antennæ are 9-jointed; the 1st joint being elongate, the 2nd short, thick, 3rd, 4th, and 5th scarcely longer than the 2nd, sub-equal, 6th very short, and 7th, 8th, and 9th forming a club. The abdomen is composed of

<sup>\*</sup> See "Voyage of the Erebus and Terror," pt. Insects, p. 118 -C. O. W.

<sup>+</sup> The British Museum is now indebted to the liberality of Major Parry for the type specimen of R. modestus.—C. O. W.

five segments. The tarsi are all 5-jointed, slender; the 2nd joint of the four posterior tarsi being long, and the basal joint (especially of the hindermost tarsus) very short; the claws are appendiculated.

I add descriptions of Mr. White's two species-

#### R. MODESTUS.

Black, with the elytra dark metallic green. Head finely and somewhat thickly punctured, slightly contracted in front, the front margin very gently emarginate, the anterior angle obtuse; clypeus with two small impressions behind. Eyes prominent. Thorax gently convex; the sides flattened, much contracted in front, nearly straight, the anterior angles obtuse, the posterior very little so; posterior margin gently lobed in the middle, the lobe bounded on each side by a somewhat deep puncture near the margin. Disc of the thorax very delicately and somewhat sparingly punctured, the punctures more distinct and more frequent towards the sides. Scutellum elongate, acuminate, sparingly punctured. Elytra gently convex, at the base as broad as the base of the thorax, broadest at the basal third, then gradually contracting to the apex; each elytron with ten punctate striæ, the striæ somewhat strongly and not very closely punctured, the interstices moderately convex, sparingly and finely punctured near the suture, more distinctly and thickly towards the sides; the striæ deeper at the apex of the elytra, the 10th stria confused with the punctures at the base of the elytra. Legs pitchy, very long; claws pale, furnished beneath with a blade. Palpi and the two basal joints of the antennæ testaceous.

Length  $2\frac{3}{4}$  lin. (6 mill.). Breadth  $2\frac{1}{2}$  mill.

Habitat, N. Zealand (Wellington).

#### R. PEDINOIDES.

This species differs from the former in being rather larger and less contracted behind. The two impressions on the clypeus are wanting, and supplied by two punctures between the eyes. The thorax has the lateral depressions more distinct at the posterior angles, which are a little more obtuse; the sides are fuscous. The elytra are darker, and tinged, especially at the sides, with fuscous; less contracted posteriorly, and less acuminate at the apex; the striæ are deeper and more strongly and less regularly punctured, the interstices are more convex and extremely delicately punctured (almost smooth), the 10th stria is scarcely abbreviated at the base. The legs are shorter. The antennæ have the six basal joints fuscous. Length 3 lin. (6½ mill.). Breadth 3 mill.

N. Zealand (under stones).

British Museum: December 11th, 1868.

196 January,

DESCRIPTION OF A NEW SPECIES OF PSOCIDÆ (CÆCILIUS ATRICORNIS)
INHABITING BRITAIN.

BY R. M'LACHLAN, F.L.S.

CÆCILIUS ATRICORNIS, n. sp.

Rufo-flavus, nigro-varius. Antennæ sat robustæ, alis dimidio longiores, atræ, (♂) pilis concoloribus brevibus vestitæ; articulo tertio ad apicem testaceo. Caput rufo-flavum, supra nigro-cinctum, nitidum; fronte palpisque flavis haud signatis; oculis rufo-flavus. Mesothorax antice niger, postice rufo-flavus. Metathorax rufo-flavus, nebula antica lineaque transversali postica nigris. Abdomen rufo-flavum, supra linea utrinque basali, stria mediana longitudinali, punctoque anali, nigris. Pedes rufo-flavi, genubus picescentibus, tarsorum articulo ultimo nigricanti. Alæ hyalinæ, vix fuliginoso-flavescentes, impunctatæ; venis venulisque flavis, setis nigricantibus brevibus instructis: anticarum spatio pterostigmaticali elongato, apicem versus dilatato; cellula elliptica parva.

Long. corp. 1½"; exp. alar 2½".

Hab. in insula Vectis, mense Novembris jam novo, rima instanti.

Several examples of this little species were taken by Mr. Dale and his son at Freshwater, in the Isle of Wight, on the 5th of November, when the frost was on the ground. It appears to be perfectly distinct from any previously described species, and comes nearest to obsoletus of Stephens, but is at once to be separated therefrom by its more robust form, by the black markings on the head, thorax and abdomen, and by the much stronger and intensely black antennæ, which in the 3 (the only sex I have seen), are more strongly pilose; from flavidus of Stephens it is abundantly distinct, vide Ent. Mo. Mag. vol. iii, p. 271. It is not a little surprising that so small and delicate an insect should resist a temperature below freezing point.

Lewisham: 1st December, 1868.

Notes on four additions to the list of British Coleoptera.—The following species are entitled to places in our Catalogue :—

#### 1. Amara fusca, Dej.

I possess an example of this species, given me by Arthur Adams, Esq., who captured it at Swansea. It is allied to A. ingenua, and was presented to me under that name. All the British specimens of A. ingenua that I have seen are really A. fusca, and come from the same source as my own. Dawson, however, records A. ingenua as occurring in Scotland; but I have never seen a Scotch specimen; and, if the species be really indigenous, it must be of the greatest rarity. A very good description of A. fusca will be found in the Ins. Deutschlands, vol. i, p. 597.

869.1

197

. Lathrobium angustatum, Bois.; Kr., Ins. Deutsch., ii, 678.

This species occurs rarely in various parts of the centre and south of England. t is placed in some collections as *L. rufipenne*, to which it bears, however, a resemdance only in size and colour. *L. angustatum* is more slender than *L. rufipenne*, rith long joints to the antennæ; it has a narrower head, which is more densely and finely punctured, &c. I have seen specimens of *L. rufipenne* in the collections of *Dr. Power* and Mr. Crotch, besides in my own. The only locality I know of for it is the Norfolk fens.

. Stenus incanus, Er., Gen. et spec. Staph., 700, 19.

I have found a few specimens of this species on the banks of the Nith here, t belongs to Kraatz's group of black-legged species with simple tarsi.

. Corylophus sublævipennis, Duv.

This species was captured last autumn by Mr. Crotch and myself, under some ood refuse, near Weymouth.—D. Sharp, Thornhill, Dumfries, 9th December, 1868.

Note on Lithobius forcipatus.—Mr. Bold's note on Lithobius forcipatus (p. 170) eminds me that on several occasions I have seen a Lithobius at sallows, bent on he same errand as myself; and occasionally I have seen a Hybernia projemmaria eld tight in the centipede's jaws, but I never saw a noctua—not even Taniocampa rada—captured by it. And I have known spiders attack fresh specimens on my etting-boards.—J. Hellins, Exeter, December, 1868.

Notes on (Motschulskian) British Coleoptera, §c.—Among the voluminous eferences to Insects contained in Part 2 (by Mr. W. S. Dallas) of "The Record of Gological Literature," vol. iv, 1867, are the following, which can hardly fail to atterest British Coleopterists.

p. 231) Stenolophus anglicus, Voet, occurs in Denmark, according to Schiödte, who figures its larva in Naturh. Tidsskr., 3rd Ser., iv. 535, pl. 22, figs. 12—18.

I am not aware to what recognized species Voet's Buprestis anglicus is properly eferable. It does not appear in any shape in Harold's recently published comprenensive Cataloge. From the plate (xxxx, fig. 18) in Voet's Cat. Syst. Col. (vol. i, 67, 18), the insect would seem to be one of the Geodephaga, and possibly, therefore, a Stenolophus; but the description is ludicrously vague, and no locality whatever is given for the species.

There is another of Voet's species, Buprestis erythrocephalus Anglus, figured in 1. xxxvi, fig. 26, stated distinctly to occur in England, and which is clearly recognizable as Brachinus crepitans. If Linnaeus' name were not a trifle earlier in date, suppose Schiödte would have proposed to adopt Voet's names for this insect,—or no (and, if so, which?) of them. Fabricius (Spec. Insect.) quotes Voet for this pecies, but ignores the "anglicus."

- p. 242) Necrophorus gallicus, Duv., and N. microcephalus, Thoms., are respectively referred as vars. to N. fossor and N. ruspator by Grenier, in Bull. Soc. Ent. Fr., 1867, p. x; an opinion anticipated by myself in Ent. Annual, 1866.
- p. 246) Motschulsky, Bull. Soc. Nat. Mosc., xxix, 2, p. 225, thinks the Lathridii most nearly allied to the Trichopterygidæ. He founds a new genus, Aridus (l. c., p. 260), of which our L. nodifer is the type, and describes and figures a new species, A. nodulosus (p. 261, pl. 6, fig. 7) from Eugland.

198 [January

(p. 249) Motschulsky also describes (inter alias) the following new species:— Latinalius grad, l. c., p. 286, pl. 6, fig. 3, Bussia and England. L. on latinas, p. 242, England and South Russia. Correction between Wellaston, M. S.), l. c., xl, i, p. 70, England.

- (p. 246) My-mesonemus, still apparently genus incerts sessis is transplanted by Monschulsky to the Cucufidat from the Latheldil, to which it was referred by Lacondaire.
- (p. 255) Melalentha hippocastani is incidentally referred to by Perty (Mitth. Naturf Ges. in Bern, 1867, 305) as M. tulgaris, var.
- (p. 261) Opphon conventus and O. fuscionnels are d and 2 of the same species tests Kies., Berl. Ent. Zeit., 1887, p. 407.
- (p. 281) Cryphalus abietis, Raaz., and O. tilkz, Gyll., are identical, tests Ferrari Col. Hefte, ii.
- (p. 298) Penaria peniralata and D. Levicellis, Thomson, Sweden, = D. serica, partim. We shall of course find these two novelties here.
- (p. 301) Florinssells limited is, Thomson. Coleopterists must examine their P concerns for this insect.

It may probably be not generally known that Motschulsky, in Bull. Sec. Nat Mosc., xxxviii, 2, p. 291, describes a new species of Carebus, viz., C. anglieus, taken near London! Vide Record Zool. Lit., 1866, p. 299. It is, of course, most likely that in this reference, as in some, at least, of his other localities, he has made some mistake.—E. C. Rve, 7, Park Field, Putney, S.W., Lessender, 1868.

Notes on Crypholus binodulus and Hylurgus pilosus.—On some aspens growing near Abergavenny I have detected certain beetles, which are interesting not only on account of their rarity but also on account of their habits. Last spring ! observed that two of these trees, which are from 20 to 30 years old, had been blown over in a manner similar to that in which poplars often suffer, viz., they had been snapped across at about the level of their lower branches; one of them had fallen last winter, the other during the previous one. On both I found evidence of their having began to decay before they yielded to the storm, but the more recent one was still so far alive as to be attempting to throw out leaves, yet many of its branches had long been dead and one side of the stem was so also; this l soon found to be caused by a small beetle belonging to the family Hylesissias. This beetle, Organishes hardulus, Ratz, appears not to have been taken in England since its original capture by Mr. E. W. Janson at Highgate; and I may observe that very few of my specimens present the (sexual) spines at the apex of the elyma; and that, when present, the spines are very small. This species, unlike Hylarinus meantus, which commences its attack close to the ground, first attacks the branches, and then advances downwards. A colony is probably commenced by one, or by a few pairs; but they rapidly multiply. There are about a dozen of the young aspen trees Pagalas tremals) on which I find them, and of these besides the two already mentioned, they have this season killed a third tree. The leaves which it threw out abundantly last spring are now all black and dead, and I suspect that this is entirely the work of the present season. A fourth tree is far gone, and several others are invaded. Like most of the X-lopkaga, it only

ttacks the bark. In the genus Hylesinus, and others of this family, the parent ectles make a long straight burrow, and the eggs are deposited more or less gularly along either side. Unlike these, Organilus bindulus makes what may e called a little irregular cavern rather than a burrow. This is always immelately beneath the outer bank, and does not penetrate to the wood. I find wariably a pair of beetles in each cavern, even when nearly all the eggs are eposited, or when the eggs are hatched; these are laid in little confused heaps in se recesses of the cavern, sometimes all in one heap, generally in three or four, ad to the number of from 30 to 60. The larve when hatched current without by regularity, but send to travel in a vertical direction. They are footless grubs, it! strong jaws, and a distinct head like the larvæ of the other Lydylago. I and that the ergs laid in May had in August produced some perfect beetles, ough many still remained in the larval and pupal states. This has also been the se this season with Hyperindia. I have been watching, and I suspect that this ecies, like the others, does not usually come to maturity until a month or two ter, and then hypermates before emerging. This species appears only to attack e living trees, and though so minute, is from its numbers able to cause the desnotion of any tree it colonises. A branch is usually first attacked by several irs, whose progeny then, laying their eggs in it, complete its destruction. herever a brood has been reared a wide rough crack is observable in the bank, d a destroyed branch presents the same appearance in an exaggerated form; the noie bark looks bloated and cracked, and is pierced by the exit holes of the etles. A branch is probably often attacked in sufficient force to destroy it in e season, and I have already mentioned my belief that the destruction of a whole se has been accomplished during the present season. The trunk is rarely atsked till most of the branches are dead, and its vitality is then so much reduced at no distortion occurs from their ravages, except of course that it soon becomes ite decaved.

On the same aspen trees that were blown over there was a quantity of ivy. d the bending of its stoms, where it was turn down, had proved as injurious to as if it had been our across. This has fallen a year to Hylary is pillens, rare as British insect. Odd specimens occur; but as no one in this country has remarked on its habits, it has never been found in any quantity. I have found it in almost y ivy that was in proper condition for its attack. Neither healthy living ivy, nor ggets out from the tree, suit its taste, but when sickly and dying, it is at once acked. There is a fashion of treating ivy, observed in many districts, of simply tting across or removing an inch or two from the stem, the result of which, as well known, is not the immediate death of the plant, which usually survives for tear or two. The back of either the upper or lower (but usually the upper) ction of ivy so treated is a favourite habitat of Hylungus glusus. In this the cent beetle makes a burrow of about an inch in length, often half round the m, and the eggs are laid rather irregularly along its sides and covered over with ss. The larvæ eat galleries at right angles to this, and sometimes travel as cularly and symmetrically as those of Hyleshous fraction. When examining tvy the beecle last spring, I found several shallow grooves, usually on smaller stems suitable for oviposition, and along the side in contact with the supporting tree. ese were often untenanted, and had been obviously merely eaten as food by the

beetles, which had temporarily sheltered themselves behind the stems, and abandoned them for more promising material at the first opportunity.

All the Xylophaga appear to eat largely while in the perfect state, and, unless they find a nidus for oviposition at once, commence to browse on any food at hand.

I have found that during the past warm summer many species have emerged at the end of July, which do not usually become perfect until September, and then do not emerge before the next spring. Every season, probably, a small proportion is perfected early, as the majority have been during the past season; the rest, following their usual habit, remaining till spring. What do these prematurely-developed specimens do?

In August I found Cryphalus binodulus engaged in oviposition just as they were in May; and Hylurgus pilosus, Hylesinus crenatus and H. fraxini eating galleries, in each of which there was only one beetle, and, as the bark was not such as they usually choose for oviposition, and there was no sign of that process being carried on, I conclude that they intend to hybernate in these galleries, and to postpone oviposition until spring. Though Hylurgus piniperda and Scolytus destructor had almost all emerged, I have had no opportunity of tracing them further.

In Hylesinus and Cryphalus binodulus, I always find a pair of beetles in each burrow. During the entire period of its construction, Hylurgus pilosus is often in pairs, but the male usually leaves before oviposition is complete, though with this, as with the former species, pairing occurs in the burrows, and probably only there. The economy of Hylastes palliatus is similar. In the burrows of Hylurgus piniperda, I have rarely found both beetles, and then only when the burrow was just commenced. Of Scolytus destructor, I have only found a pair in a burrow on one occasion, and am inclined to doubt whether the male often enters the burrow at all. In my former notes, p. 140, line 10, the word "side" should be "end" of "far end."—T. Algernon Chapman,\* Abergavenny, October, 1868.

Captures of Coleoptera near Manchester, &c.—Scymnus nigrinus, S. discoideus, and Coccinella hieroglyphica, beaten out of Scotch fir; April and May. Ips 4-punctata, abundantly under bark of freshly-cut pine stumps, accompanied by Epuraa pusilla and E. deleta. Tomicus bidens, completely undermining the tops, downwards, of Scotch fir. Pachyrhinus 4-tuberculatus, by sweeping in damp meadows all round the district. P. comari (one specimen), at Hale. Two very curious black varieties of Anthonomus ulmi, one beaten out of a hedge surrounding an orchard apparently containing no elm, and the other obtained by sweeping in the Bollin valley. Tropiphorus mercurialis, sparingly all over the district. T carinatus, at Chorlton and in the Bollin valley, on each occasion singly. Haliplu. elevatus, common in the river Bollin. Tachyusa constricta, abundant on the bank of the Bollin, accompanied in muddy places by Georyssus and Heterocerus margin atus. Barynotus Schönherri, occasionally, by single specimens. paludosum and punctulatum, Bledius longulus, and B. subterraneus, in profusion banks of the Bollin. Clivina collaris, on all our river banks. Gymnetron becca bunga, type form, a single specimen by sweeping in the Bollin valley; the var

<sup>\*</sup> I can send live or unset specimens of the Cryphatus to any Coleopterist in need of the species and should myself be glad to receive any duplicate wood-feeders, Longicorns or Lamellicorns.—T. A. C.

.869.]

meronicae being common on Veronica. Apteropeda globosa, a few specimens by weeping in damp meadows, Bollin, in the spring. Mantura obtusata, Bollin valley and Chatmoss; M. chrysanthemi, Chatmoss. Corymbites pectinicornis, damp mealows, Bollin. Sitones cambricus, sparingly distributed in sandy places. Donaciae lentipes and D. sagittariae, Halemoss. Psylliodes attenuata, Bollin valley. Ceuth. Impressicollis; four or five specimens have occurred in this district to Mr. Hardy and myself. Silpha rotundata, a single specimen of the pitchy variety, Llangollen. Psylvhra 4-punctata, beaten off hazel, with Acalles misellus, Orchesia minor, Telehorus abdominalis, and Pyrochroa coccinea.

At Sherwood forest in June,—Eros affinis, in rotten birch. In decaying fungus, oth Triphylli, Colenis, Liodes humeralis, Triplax russica, Scaphidium 4-maculatum, and Thymalus. Liodes orbicularis, under birch bark, and Tritoma bipustulata in angus under birch bark. Scolytus intricatus, Trypodendron domesticum, and Xylorus quercus, on felled oaks. A single specimen of Quedius scitus, and Bolitochara wida, under bark, in decaying fungus. Strangalia 4-fasciata, in a rotten birch. Inder felled trees, Phymatodes variabilis, Athöus rhombeus, and Phlæotrya Stephensii. single specimen of Hypophlæus castaneus under bark. In boletus, Eledona paricola.

At Cleethorpe.—Cicindela maritima, sparingly. In mud, between tide marks, tedius tricornis and bicornis, both commonly. B. arenarius in immense numbers, ecompanied by Diglossa mersa. A single specimen of Aphodius villosus occurred me in dung.

At Clifton, a few miles from Manchester, Donacia bidens and sparganii have en met with in some numbers; and, at Stalybridge, Aphodius fatidus and Nebria gllenhalii.

Telmatophiles Schönherri and Erirhinus nereis have been taken at Mobberby.

J. Kidson-Taylor, Thorn Cottage, Lime Grove, Longsight, Manchester, Oct., 1868.

A List of Noctuida observed in Morayshire .- It will be seen from the following t of captures that my attention has been exclusively directed to the Noctuce. few other insects certainly were noticed, but mostly common species-for stance, N. plantaginis and P. fuliginosa were both common enough; while in Altyre Woods, E. versicolor was seen in great abundance. I succeeded, hower, in capturing only four specimens—one & and four \$\,9\$, the latter sitting quietly the bare birch twigs in April. The males were far too lively for me. Some gs were procured, but, owing to my want of knowledge in rearing the young væ, only one lived into the pupa stage. E. Blandina, H. Semele, C. Davus, C. dui, V. Atalanta, A. Selene, A. Euphrosyne, T. rubi, all abundant in suitable alities; and  $\overline{V}$ . Io was, I believe, seen on one occasion in Altyre Forest. T. populi punded in the larva state; those found on Populus alba wonderfully matching colour of its food-plant, being of a pale glaucous-white hue, sometimes blotched h red. S. convolvuli was, I believe, frequent throughout the county. I had ee specimens sent me which had been captured hovering over Petunia. M. stelarum was observed on several occasions in similar localities. A. betularia and bidentata both very frequent. All the British species of Hepialus were taken, specimens of H. velleda occurring at rest in the crevices of birch trees in yre Woods. C. ligniperda larvæ abundant all over the country, doing great

202 [January,

mischief to the birch and oak trees. I do not recollect whether a Cossus-infested birch has been noticed before to be such an excellent trap for Noctuæ. One small tree on my hunting-ground was nightly visited by hosts of moths, and what is remarkable enough, certain species were taken there and nowhere else; for instance, I only took five specimens of N. glarcosa, the whole of which occurred on this wounded birch, which also yielded one night no fewer than six E. nigra. The larvæ of N. querchs were very abundant on heather; one specimen only, however, out of some 20, yielded the perfect insect on 20th July. The remainder are still in their pupa state. P. populi scarce, only one pupa at foot of poplar tree. T. pavonia miner not very common, smaller and less richly coloured than Yorkshire specimens. C. spartiata very abundant.

The subjoined list of Noctuæ will show that this locality is a very promising one. Being, however, my first season's collecting after an interval of some 25 years, I was imperfectly read-up in the modern system of collecting larvæ and pupæ, otherwise the list of species might have been considerably augmented.

A notable fact was the remarkable scantiness of most of the insects which, with few exceptions, were fully four or five weeks in advance of their usual time of appearance, owing, no doubt, to the heat of the season.

The date is that on which the first specimen was observed.

T. batis, 20th June, scarce, two specimens at rasp blooms. C. duplaris, 27th June, frequent at sugar; or, 20th June, frequent at sugar; flavicornis, 30th March, rare at rest, afterwards many larvæ on birch. A. tridens (?), 27th June, at sugar: I suspect I am right in referring this to tridens, being darker than the next.; psi, 4th July, not uncommon at sugar, also at rest on birch trees; leporing, 25th May, at rest in Altyre Forest, afterwards many larvæ on birch ; liqustri, bred from pupæ taken on ash trees; rumicis, 25th May, two at rest; salicis, 17th June, rare at sugar; myrica, 16th June, rare, one specimen at rest near Dallas. L. lithargyria, 27th June, very abundant at sugar; conigera, 4th July, not uncommon flying near Luchnis vespertina, and at sugar; impura, 4th July, not common, sugar; pallens, 3rd July, very abundant at sugar and flowers. H. nictitans, 7th August, not uncommon at sugar; micacea, 2nd August, several specimens at sugar. X. rurea, 25th May, common at rasp blooms and sugar; polyodon, 23rd June, very abundant at sugar and at rest. C. graminis, taken last autumn on rag-wort. L. testaceo, 18th August, abundant at light. M. anceps, 25th June, not unfrequent at sugar; brassica, 23rd June, occasionally at sugar and at rest. A. basilineo, 2nd June, very common at rasp blooms; fibrosa, 29th June, rare at sugar; oculea, 2nd July, very abundant at sugar. M. strigilis, 6th July, not common, sugar; fasciuncula, 11th June, very abundant at sugar; literosa, 25th July, common at sugar. C cubicularis, 19th June to October, over flowers, at sugar, and swarming in hayfields. R. tenebrosa, 7th June, very common over rasp blooms, also at sugar. A valligera, 27th July, not abundant, sugar, several beautiful varieties; suffusa, 24th July until October, not uncommon at sugar; segetum, 25th July, not common sugar; lunigera, 28th July, rare at sugar; exclamationis, 24th June, not common sugar; corticea, 26th June, not common, sugar; nigricans, 17th July, not rare a rest and at sugar; tritici, 26th July, sugar, frequent; agathina, 14th August, no uncommon on heather, but very difficult to take; porphyrea, 8th June, swarming over heather: pupæ very plentiful, under moss on heaths; pracoa, 7th Augus

re at rest. N. pyrophila, 1st July, rare. T. janthina, 25th July, not uncommon, ne blossom and at sugar; fimbria, 18th July, common at sugar; subsequa, 1st agust, not uncommon at sugar: unfortunately, I did not recognize the moth in ne to secure many specimens; one evening I saw five on one round, but did not x one, thinking it only a variety of orbona; orbona, 16th June, swarming at gar, and varying both in colour and markings to an extraordinary degree; proba, 23rd June, very abundant at sugar. N. glareosa, 26th August, several at a ch tree infested with Cossus; depuncta, 24th July, not uncommon at sugar; rur, 1st July, frequent at sugar; plecta, 21st June, rare, flying over grass. Crum, 22nd June, not uncommon at sugar; triangulum, 4th July, rare at sugar; nnea, 12th June, frequent at rasp blooms and at sugar. N. festiva, 16th July, uncommon at sugar; conflua, 6th July, not rare at sugar; Dahlii, 27th July, arming at sugar, and presenting an extraordinary range of variation in colour m bistre brown to dark maroon purple, -scarcely two are precisely alike in ckings; bella (rubi), 1st August, common at sugar, varying much in colour; brosa, 17th July, rare at lime blossoms, also at sugar; baja, 22nd July, common augar; neglecta, 26th July, not uncommon at sugared rags placed on the heath; theorapha, 20th July, swarming at sugar, and varying much in colour and margs. T. piniperda, 28th March, very abundant at sallows, ranging in colour from k red to grey and light green: pupæ under moss at pine trees. T. gothica, h March, common at sallows, also at sugar; rubricosa, 17th April, not common, sallows, Califer Hill; instabilis, 27th March, frequent at sallows; stabilis, 28th ch, swarming at sallows, and after at sugar. O. macilenta, 12th Sept., not mon, sugar. A. ruina, 27th August, very abundant at sugar; litura, 12th rust, swarming at sugar. C. vaccinii, 13th Sept., swarming at sugar, and very able; spadicea, 16th Sept., plentiful at sugar. S. satellitia, 7th Sept., swarming ngar. H. cerago, 6th July, not common, sugar; ferruginea, 28th August, freat at sugar. E. fulvago, Sth August, not rare at sugar. C. trapesina, 23rd , swarming at sugar. D. capsincola, 29th June, not uncommon, hovering over inis vespertina, in the capsules of which the larvæ abounded. D. cucubali, August, one specimen bred from larva found in July. P. chi, 31st July, very adant at rest on pine trees, also at sugar. E. nigra, 12th August, very abundant agar. M. oxyacanthæ, 8th Sept., frequent at sugar. A. aprilina, 16th Sept., nent at sugar. P. meticulosa, 23rd Sept., frequent at sugar. E. lucipara, 1st , rare at sugar. A. occulta, 15th August, rare at sugar; nebulosa, 13th August, saw but missed at sugar, H. adusta, 30th May, rare at rest; protea, 5th ast, swarming at rest on pine trunks, also at sugar; eleracea, 4th July, rare, r; thalassina, 22nd June, not common at rest and at sugar. C. vetusta, August, common at sugar, but not nearly so frequent as the next; last season, on contrary, exoleta, was the rarest of the two; exoleta, swarming in vast numbers gar; one night I counted more than 200 in one round of my trees. It also rred in the spring at sugar and sallows. X. rhicelitha, 28th Sept., rare at . C. umbratica, 1st July, rare over Luchnis resperting. A. myrtilli, 5th June, aon flying over heaths: the larvæ very common. B. parthenias, 5th April, abundant in Altyre Forest flying over the birch trees; netha, 16th April, same ty as the above, but not so frequent. A. urfice. 26th June, flying over rasps. yeitis, 16th July, rare flying over flowers : jestuca, 30th June, rare flying over

Lychnis vespertina; iota, 25th June, rare over flowers; pulchrina, 24th June, common flying over Lychnis vespertina; gamma, 25th May, very abundant over flowers, and occasionally at sugar. A. tragopogonis, 18th July, abundant at sugar and lime blossoms. This reminds me that I have seen, and frequently killed, mice at my sugared trees 4 and 5 feet from the ground. Squirrels were also seen licking the sugar, but only by day. S. anomala, 12th August, not uncommon at sugar. Penea, 16th May, not uncommon flying over heather.—Geo. Norman, Cluny Hill Forres, N. B.

Notes on Scotch Lepidoptera.—The following notes on some common Lepidoptera may perhaps be not devoid of interest to the readers of the Magazine.

Calocampa exoleta.—In rearing some larvæ of this insect from the eggs, I was urprised to find that at first sight the two front pairs of ventral prolegs were undeveloped. This fact may be as new to some of the readers of the Magazine at it was to me, so will give all the notes made on the subject. I do not know whether the larvæ of all the Noctuina are developed in the same manner, of whether it is a peculiarity of the genus Calocampa.

The following are the notes made. 1868, April 15th—Ova of C. exoleta hatched Larvæ with only 12 legs; the first two pairs of ventral prolegs being absent April 18th—First two pairs of prolegs beginning to appear, but not used. Apr 20th—First two pairs of prolegs now about half the size of the second two pairs the coronet of hooks also beginning to be visible. April 22nd—Larvæ moulted first two pairs of prolegs bigger, but not yet used. April 26th—Larvæ moulted second pair of prolegs slightly used, first pair not yet used. April 28th—First pa of prolegs in use, but not quite so large as second pair. At this date an accide unfortunately befell the larvæ, and they all perished.

Selenia illumaria.—Some moths of this species emerged about the end of Mar and laid some eggs. The young larvæ appeared April 15th, fed rapidly, and sp up about May 21st. At this time the imagines were still flying out of doors, so thought that my brood would be probably developed as perfect insects in Ju However, June passed and was followed by July, and no appearance of illumar On the 7th of August one & came out, and several other larvæ appeared at tervals since—the last on the 15th of October. The pupæ were not subjected cold in any way, being in a cool room and in the same box with a pupa that p duced Hadena protea on August 7th.

Melanthia occilata.—Found a pair in cop., about the end of June. Es hatched early in July. The larve fed on Galium till the beginning of August, they spun rather open cocoons, brought their heads and tails together, changed a dirty whitish colour, and (as regards the majority) have remained in the sa condition ever since, quite healthy. A few, however, changed to pupe in Septeber, and one moth appeared October 14th. They have been left in a cold rowithout a fire.—F. Buchanan White, Perth, October, 1868.

Notes on Lepidoptera at Carmarthen.—A few notes regarding the Lepidopt found in this neighbourhood, a locality almost unknown entomologically, may printeresting to some of the readers of the Magazine. The collecting was confined the grounds of this asylum, excepting two days spent on the Sand Burrows

The sylum great expectations of the Burrows were doomed to almost complete isappointment; I got a good series of A. ripæ, under pieces of wood lying on the and, but nothing else worth mentioning. The asylum grounds have proved much tore productive, and the very little time devoted to collecting yielded some good sings. In July a specimen of P. isodactylus was beaten out of a hedge. A day or wo later the British specimen of Scoparia Zelleri, previously recorded as having sen captured by the Rev. E. Horton, appeared at light; and the same agent has nee attracted a specimen each of E. fuscantaria, L. cespitis, D. Templi, E. lutunta, and Diasemia literalis. These, with a multitude of commoner species, show a richness of the district, and will serve as an incentive to greater exertion at season.—George J. Hearder, Joint Counties' Asylum, Carmarthen, December to 1868.

Colias Hyale near London; abundance of Cynthia cardui, §c.—A friend of mine w a specimen of Colias Hyale (now in my possession) caught in the waste ground tween Finchley and Edgware Road Railway Stations. I have also heard of two her specimens having been taken there, and I was on the spot when another was ten this morning. Colias Edusa is not of unfrequent occurrence in the same place. aw it also in our garden about the middle of July.

I suppose that every entomologist and collector has noticed the extreme abunce of Cynthia cardwi all over England this year. In a clover field near Kenilrth (where I have been staying during the last month) I and some other coltors who were in the same field caught nearly twenty in one morning; it was been very common near here last month, but is not taken nearly so frequently now. Enerst B. Bax, 12, Mansfield Villas, Hampstead, September 8th, 1868.

Occurrence of Tapinostola elymi at Cleethorpe.—I am happy to inform you that above-named insect is to be taken freely at Cleethorpe, in Lincolnshire. The sa feeds on the sand-reed (Elymus arenarius), and the perfect insect may be ken out of that plant in the day-time, and is found at rest on it at night. Time—beginning to end of July.—Joseph Chappell, 8, Richmond Street, Greenheys, achester, 23rd November, 1868.

Eupithecia irriguata, &c., at Glanvilles Wootton.—I have taken here, during year, E. irriguata, Macaria alternata, Phycis abietella, &c.; Heliothis dipsacea bred on June 4th from a pupa found in October, at Charmouth, amongst ilot.—Chas. W. Dale, Glanvilles Wootton, Sherborne, November 12th, 1868.

Larentia salicata in North Devon.—Among some insects taken by my young ad Master Arthur Chandler, at Challcombe, North Devon, where he is at sol, I find several specimens of Larentia salicata. These, he tells me, were a about a sand-pit on the borders of Exmoor, where they were common. The rrence of this species so far south seems worth recording. These show hardly variation from northern specimens.—Chas. G. Barrett, Norwich.

Abundance of the larva of Botys asinalis near Bishopstowe.—Rubia peregrina, ood-plant of B. asinalis, is very abundant on the rocks and in the hedges just w Bishopstowe, and there is scarcely a plant but has been attacked by the e; the white patches caused by them in the dark green leaves of the plant are a feature in the landscape.—E. Horton, Powick, Worcester, Nov. 16th, 1868.

Odour emitted by Sphinx convolvuli.—I omitted to add to the notes on Sphinx convolvuli, which appeared in the last number (p. 168), the fact that two or three male specimens of the moth, caught in my garden this autumn, whilst alive, and held between my finger and thumb, gave forth a very perceptible odour of musk, as was remarked by several members of my family besides myself; I did not perceive the same smell with the females, but not having been able to procure any more specimens after my attention had been drawn to the males, I do not like to say positively that the sexes differ in this respect.—J. Hellins, Exeter, December, 1868.

Habits of Coccyn hyrciniana—If the spruce fir is examined early in the spring, many of the needles will be found to be eaten out and turned brown, and carefully laid down parallel with the shoot, so as to form a covered way for the protection of the larva. This larva seems hard to find, although its traces are plentiful enough, but I believe it to be that of Coccyn hyrciniana, which I have bred by keeping a lot of the infested shoots in a bottle.—Charles G. Barrett, Norwich.

Notes on the earlier stages of Dasycampa rubiginea. - I well remember the curious mixture of satisfaction and disappointment with which I once saw a larve of Cidaria pyraliata fall into my net, after having for three seasons vainly tried to procure one, in order that Mr. Buckler might be enabled to complete a set of figures of that genus: there was satisfaction that the long-desired species was obtained, disappointment somehow that now there was no other Cidaria to be looked for-reticulata, of course, excepted; but that seemed, and still seems, se far out of reach, that it did not come into my reckoning. And I must confess t something like a return of the same mixed feelings, as I take up the pen t chronicle my observations on the earlier stages of Dasycampa rubiginea, for one of my longest desiderated secrets is now gained, and a twelve years' pursuit ha come to an end. Throughout that period scarcely a year has passed without som one of us in this neighbourhood taking a specimen of the moth, but eggs we could not get. If a female were taken at ivy in the autumn it was no good, for sh could not be kept alive till the pairing time in spring. Mr. Norcombe once shr up six moths, with the sole result of getting just so many wasted specimens for the cabinet; and if we took a moth at sallows in the spring, it always turned out to a male. So it had gone on, as I said before, for twelve years. However, the season, Mr. Thos. Terry, of Babbicombe, has been more successful, and to h generosity I am indebted for my present knowledge.

On March 21st, 1868, he took a female at sallows, and shut her up in a glast topped box about six inches square, putting in for her food a little plum-jam. (March 28th he saw two eggs had been laid on the box; on the 30th, three mor on April 1st, two more on the box, and four on a sprig of blackthorn which he he supplied. These were followed by three or four more, for which I have no date and were all laid singly, on the underside of a leaf, or under any little projection the box. How, after this again, the unhappy moth stuck in the jam, and perish miserably with 87 eggs in her still unlaid; how, of the few secured, bad in pursued nearly one-third, either before or just after the hatching of the larva will not relate at length: I mention these mishaps only to enhance Mr. Terryliberality in still sparing eggs and larvæ to Mr. Buckler and myself.

The larvæ were hatched between April 19th and 23rd; fed freely on plu leaves, and not so well on sloe, sometimes taking to knotgrass, and became full-from June 15th to 20th; and the moths appeared between September 8th and 20

The egg is unusually large for a Noctua, quite as large as that of Xylocampa hithorhizz; in shape round and full above, but rather flattened below; the surface is glistening, and ornamented with more than thirty slight longitudinal ribs, of which more than half terminate before reaching the apex; these ribs are connected by very slight transverse reticulations. The colour at first is whitish, faintly tinged with yellow, but it soon becomes blotched with brownish buff, in some specimens rregularly, in others more regularly with a central spot at the top, and a broad celt round the middle, and to the naked eye the egg now appears something the colour of a grain of wheat: after a time the blotches turn to puce, and finally the whole egg becomes pale purplish.

The larva at first is of a semi-translucent purplish tint, with brown shining nead, and the usual dots black and distinct, each emitting a long wavy whitish air. The first food eaten is the empty egg-shell, but after the larva has begun to at leaves its colour soon becomes greenish. After a few days the colour changes o brown, and the hairs show golden in the sunshine; and after another moult the rown becomes darker, and the transverse rows of tubercular dots show to the aked eye like dark bands. When about 3 inch in length it assumes a waxy hining appearance, reminding one of an Agrotis, with the head and collar shining lack, but after the next moult it comes out at first nearly black all over; this igritude does not, however, last long; in a day or two the skin becomes paler, nd from this time till it attains the length of  $1\frac{1}{8}$  inch the description is as follows: he ground colour ochreous-brown, with rather pale dorsal, sub-dorsal, and spiraular lines; the head dark brown, a dark brown dull plate on second segment, also n tip of the anal segment; the tubercular dots black and very distinct, the first orsal pair of them in each segment after the fourth being placed in a blackishrown transversely oval patch, which interrupts the dorsal line; the body thinly overed with very fine silky, brown hairs: in some specimens the oval dorsal atches are replaced by pairs of oblong dots, separated by the dorsal line. The angth of the full-grown larva is  $1\frac{1}{4}$  inch when at rest, but more than  $1\frac{1}{2}$  when in otion, its powers of self-extension or contraction being much greater than those of by other Noctua larva with which I am acquainted: the figure stoutest at the welfth segment, and thence tapering regularly to the head, which is the smallest gment, and the thirteenth tapering rapidly behind, the anal pair of legs being markably close together; the skin is soft, and each segment swells out plump in e middle, all the tubercles and the plate on 13th segment have disappeared, and nongst the long fine silky hairs there is now a growth of shorter ones. The dour is now purplish-brown, glistening in certain positions with a faint violet, ealy gloss; the pulsating dorsal vessel shows as an indistinct paler line; the ark patches down the back have become in some instances a thick, clumsy X on ch segment, in others a pair of curved blotches, and there are also pairs of naller and fainter dots on segments 2, 3, and 4, those on 4 being the largest, and a square form; the head is intensely black; the region of the back is curiously eckled with very fine blackish-brown curved marks, which, however, do not touch e X marks, but allow them, as it were, to stand out more distinctly; and in the me way the sub-dorsal and spiracular lines are to be distinguished by the absence these freckles from the ground colour, rather than by any decided line of another at; the spiracles small, black, and shining; the belly paler than the back, and mewhat tinged with green; the hairs are all of a beautiful golden brown. The bit of the larva seemed to be to hide itself by day, in spite of its silky, Bombyxe clothing, and to feed and move at night; and I fancy its food, when at large, ast consist of low plants, rather than trees or shrubs, otherwise we should hear its capture.

The Zoological Record (vol. ii, 1865) does indeed contain notices, extracted from Berl. Ent. Zeits., 1865, p. 112, and Stett. Ent. Zeit., 1865, p. 113, of its being found in ants' nests, those of Formica fuliginosa; but its voluntary presence in such a situation is more than I can comprehend.

When about to change it spins a thin cocoon on the surface of the ground, working in moss or leaves above, and bits of earth, &c., below, but still keeping it of a tolerably oval form. The pupa is about \(\frac{1}{4}\) inch long, moderately stout, cylindrical, but a little depressed at the junction of the back of the thorax with the abdomen; from this point the abdomen rather swells out in size for about two-thirds of its length, and then tapers to a somewhat obtuse point, which is armed with a single tiny spike, and attached by two or three threads to the lining of the cocoon; the surface is shining; the colour dark purplish-brown.—John Hellins, Exeter, November 26th, 1868.

Note on Acronycta alni.-In reference to the interesting summary of what is known of this insect by Mr. Stowell, I may add to the last "locality" named for the larva, viz., "a gentleman's coat," another, and the only one where I have found it, and that is "a gentleman's boot!" A friend of mine was sitting one September afternoon, in 1851, on a branch in a plantation in Staffordshire, when I happened to pass by, and he called my attention to a larva, crawling on his boot. I soon produced a pill-box, and secured the unknown stranger. A sycamore was overhead, and probably this full-fed larva of A. alni (for such it proved) had fed thereon. The above made a cocoon of some bits of rotten wood, in the corner of a box, and came out a fine 3, the following June, I believe. Another scrap of information I can contribute about this insect, viz, that it has come to sugar in one instance during the current year, as late as July 3rd, and in this case the specimen was a Q, two others being missed on the following night. I have a suspicion that this larva may be like that of A. aceris, which clings very closely to the leaf on which it rests, and is difficult to dislodge by beating. If so, it may be one of those larvae that should be looked for under the leaves, or even "upon" them, as Mr. Stowell's narrative seems to suggest .- Bernard Smith, Marlow, November 27th, 1868.

P.S.—After writing the above, it strikes me that the larva of alm above mentioned may be the same as the one recorded in the Zoologist, as taken in 1851. The example is still in my possession, and as fresh as ever.—B. S.

A Reply to Mr. Dunning's Remarks on the Gender of Acanthosoma.—This somewhat important question of nomenclature having been again raised, I hope to be indulged with space for a reply, as short as I can make it. To save trouble I will take several of Mr. Dunning's questions collectively, as they all depend upon the same principles.

- 1. Are not Redbreast and Wagtail as much nouns substantive as Blackbird?
- 2. May not Acanthosoma be a substantive just as much as Dipsocoris?
- 3. Is Acanthosoma an adjective or a substantive?
- 4. Why may I not say Acanthosoma=Spinebody, a compound noun substantive which therefore must have some gender or other of its own?

Blackbird is a compound noun substantive, grammatically and logically correct But such words as Redbreast, Wagtail, Spinebody, Longshanks, Lackland, Bluebeard etc.,—common in English, and some of them sanctioned by usage,—are not gram matical or logical. They belonged originally to the language of the vulgar, and of children, and are mere familiar nicknames. Their incorrectness consists in their not containing the real subject,-whether bird, bug, or man. Instead of this they put forward (graphically and poetically) a new subject-breast, tail, body, beard, etc.,-from which our extensive knowledge and reading enable us to infer the real subject of discourse with much readiness. Thus by Redbreast and Wagtail we understand certain birds; by Longshanks and Lackland, two English kings; and by Bluebeard, a celebrated Eastern potentate. These names are only tolerable in English because the language has no genders. We get into no difficulty by speaking of the yellow Wagtail: the gender of yellow is undetermined, and the difficulty is concealed. So also Bluebeard may be spoken of as a man, -no matter what genler his beard may have. But this slovenly idiom is impossible in languages with hree genders, like Greek and Latin. The difficulty which is concealed in English becomes in them fearfully apparent. We might nickname an individual Brazenbeard, aving no fear of genders before our eyes. But in Latin Ahenobarba, a, f., will ot do for a man's name. His name, like himself, must be masculine, and accoringly we have the adj. Ahenobarbus, taking its gender from the REAL SUBJECT, from he man, and not from his beard. Similarly all other words, containing only some ttribute of the subject, must in Greek and Latin be adjectives, agreeing in gender rith their REAL SUBJECT, and with nothing else. And this actually amounts to o more than that golden rule of our youth, than an adj. agrees with its subst., &c. f this rule is to be evaded in zoological names, as it is in English, the whole ystem of genders becomes absurd, and there is no end to the incongruities which rill occur. Let us take a few published names of genera, such as Lonchosternus, asysterna, Dactylosternum; Barynotus, Aloconota, Cyclonotum; Stylosomus, Igosoma; Amblystomus, Sericostoma; Chasmatopterus, Dictyoptera, Liopterum. hose in italics are, according to Mr. Dunning, substantives neuter, because Steron, Noton, Soma, Stoma, and Pteron, are neuter. What shall we say then for the thers? They must be equally neuter, notwithstanding their terminations, or hat becomes of the rule of the "German illuminato?"—Or if some of the above ords are substantives and some not, will Mr. Dunning kindly point out which is hich, and why? That he will see the impracticability of this, I am well assured, d I have good hopes that he will avail himself of his reserved right to a change opinion, after hearing the other side, and will henceforth agree with me that ch words must be treated as adjectives.

To conclude, let me for a moment revert to the most presumptuous of the aimants of the rank of noun substantive, viz., Acanthosoma.

The subject of this word is a certain group of bugs. This subject is not conined in the word Acanthosoma, but is understood. Every noun that does not not intain the subject, must contain the predicate, or it has no meaning at all. And it contains only the predicate, it is what grammarians call an adjective. ThereThe Acanthosoma is an adjective. Q. E. D.

I have something to say to other interesting matters mentioned by Mr. Dunning, t for want of time and space I must leave them for the present.—T. A. Marshall, allege, Milford Haven, December, 1868.

[Mr. Marshall's remarks upon the other points raised in Mr. Dunning's paper Il appear in our next No.—EDS.]

The late John Curtis's Entomological Drawings.—The original coloured drawings the plants and insects delineated by Mr. Curtis in the "British Entomology" ve been, since his decease, in the possession of his widow, who is now desirous

210 (January,

of disposing of them. We heartily hope they will fall into the possession of some Institution that will render them available for the purposes of science, or become the property of a liberal-minded private gentleman. Beautiful as are the engraved copies, they give no idea of the artistic skill and truth to nature exhibited in the originals. Curtis was Nature's artist par excellence. Information respecting them will be gladly furnished by Mr. F. Smith, of the British Museum.—Eds.

ENTOMOLOGICAL SOCIETY OF LONDON, November 16th, 1868. H. W. BATES, Esq., F.Z.S., President, in the Chair.

Mr. Bond exhibited Tapinostola elymi, captured near Yarmouth, and a strange variety of Dianthæcia capsincola, bred by Mr. Greening, having the wings unequally coloured; also seven specimens of Polia nigrocineta, bred by Mr. Greening, from Isle of Man larvæ.

Mr. McLachlan called attention to a statement by Mr. Edwards, in the "Canadian Entomologist," respecting the occurrence of Papilio Mackaon at Fort Rupert, in Hudson's Bay; and also concerning the gradual spread of Pieris rape on the American continent. He exhibited a fine series of bred examples of Enoicyla pusilla, the terrestrial caddis-fly, with the apterous females, and larve and cases. These had been sent to him by Mr. Fletcher, of Worcester, to whom we are indebted for the discovery of this curious insect in England.

Mr. Bond mentioned the occurrence of a vast swarm of Gastrophysa polygoni at Whittlesford, in Cambridgeshire.

Professor Westwood exhibited drawings and read descriptions of new and curious forms of Hymenoptera.

7th December, 1868. H. W. Bates, Esq., F.Z.S., President, in the Chair.

A. G. Butler, Esq., F.L.S., Assistant in the Zoological department of the British Museum, and Dr. Buchanan White, of Perth, were elected Members.

Mr. Bond exhibited some extraordinary cases of melanism in *Limenitis Sibylla*, from Ipswich; also strange forms of *Lycana Adonis*, and the gynandromorphous example of *Lasiocampa quercús* mentioned at the first November meeting; this latter was a perfect and beautiful combination of the sexes.

Mr. E. Saunders sent for exhibition an example of *Crambus myellus* of Hübner, taken by Mr. N. E. Brown, near Aberdeen, and new to Britain. (It is a species allied to *pinetellus*, but differs in the possession of a sub-apical transverse silvery line.)

Mr. Dutton exhibited a beautiful example of Catocala frazini, captured at Eastbourne this last autumn.

Professor Westwood exhibited some remarkable parasitic Hymenoptera from the Amazons, belonging to the genus Aulacus, &c., of which he read descriptions.

Mr. Kirby communicated a paper on entomological nomenclature, especially referring to the question as to which was the type-species intended by Linué, Fabricius, Latreille, &c., in their genera of Rhopalocera, now that these genera were so greatly subdivided. A long discussion ensued, in which the President, Professor Westwood, and Messrs. Pascoe, Stainton, Butler, Janson, Dunning, McLachlan, and others, took part, the general opinion being, that in the absence of a special type noted by the authors, the generic names should be restricted in accordance with the views of the succeeding writer who first subdivided the old genera, and that the sweeping changes suggested by Mr. Kirby would retard instead of benefit science.

The Secretary announced the death of Prof. Boheman, of Stockholm (one of the Honorary Members), on the 2nd November last, aged 72.

69.)

### AN ANALYTICAL VIEW OF THE LEPIDOPTEROUS FAUNA OF HASLEMERE AND ITS VICINITY.

#### BY CHARLES G. BARRETT.

The neighbourhood of Haslemere, in which very small country wn I had the good fortune to reside for upwards of six years, is teresting as having been, in its entomological aspects, previously most unknown, although lying nearly midway between the London strict, the New Forest, and the Sussex downs and coast, all of which we been more or less thoroughly worked, and because it includes evated ground that in climate and botanical productions resembles me parts of the north of England. The hills and heaths are on the wer greensand, and the vallies and oak-woods on the Wealden clay, a two formations occupying almost the entire district.

The area over which I collected extends from six to ten miles in rious directions round Haslemere, and includes the woods and lanes wards Godalming and round the village of Chiddingfold, and towards idhurst, in Sussex; the heathy hills and marshy vallies of Hindhead d Blackdown, a small portion of Hydon Heath, with its junipers, and wide heaths and boggy hollows of Milford Heath, in Surrey, and to of Woolmer Forest, Hants, with its abundant fir woods.

The total number of species of *Lepidoptera* observed in this district 1,088, being nearly five-eighths of the whole number recorded as itish up to the present time. The various groups are, however, very equally respresented.

Of the Diurni there are 42 species—two-thirds of the entire itish list, and, excluding Colias Hyale and Argynnis Aglaia, which heared only in the past exceptional season, all may be called regular idents. None of the great rarities seem to have occurred, Apatura s, Limenitis Sibylla, Leucophasia sinapis, and Nemeobius Lucina being but the best species. Colias Edusa is of uncertain appearance, and her very common. Arge Galathea and Lycana Corydon are very e, a singular contrast to the usual rule where they occur; but this accounted for by the absence of chalk. The extreme rarity of typnnis Aglaia seems inexplicable, as the country appears as though ecially suited to it. Only two specimens, however, occurred.

Of Sphingidæ only 14 species—less than half the list—have been ad, the great deficiency being in the genus Sesia, of which but three e been noticed, tipuliformis and culiciformis both rarely, and bembermis only by its burrows in the sallow poles. Smerinthus tiliæ ins to be absent,—probably from the scarcity of elms—and Chæro-

campa porcellus very scarce. Deilephila lineata, however, has been taken, and several Sphinx convolvuli and Acherontia Atropos, as well as the three Macroglossæ.

The Bombyces are very little better represented in my list, which must, I think, arise partly from the extreme difficulty of collecting much by means of light. I have little doubt that several more species in this group and the Pseudo-Bombyces might be obtained at gas-lamps, if ever the place should have the good fortune to be thus illuminated, or by more careful working for the larvæ. The proportion is a little over a half, being 46 species. The Lithosiæ are fairly represented by nine species, quadra and complana being found at Woolmer Forest where also Limacodes testudo occurs. Endromis versicolor I have certainly seen flying in the middle of April, although I never took it; and Nola strigula has been found on oak. Anthrocera trifolii is abundan in marshy pastures, while, strange to say, filipendulæ is hardly to be found in the neighbourhood; and Liparis salicis and Nola cucullalis are equally rare. All the Hepialidæ occur, including the more abundantly northern velleda and its variety carnus.

The Geometræ are well represented by 175 species, nearly two thirds of the list, several entire genera being found—Selenia, Tephrosi Ephyra and Hibernia, for instance. Of the genus Eupithecia 30 species have been met with, irriguata and fraxinata being the best; but, odd enough, centaureata is one of the scarcest, for until this season, who one specimen occurred, it seemed to be entirely absent. Epico advenaria and Emmelesia alchemillata are plentiful in the woods, at Pericallia syringaria not scarce; and of better species, Selenia lunar and illustraria, Eurymene dolobraria, Ennomos erosaria, Cleora glabrar Boarmia abietaria and consortaria, Ephyra orbicularia, Acidalia stran nata and immutata, Lobophora sexalata and viretata, and Camptograms fluviata, may all be met with occasionally.

The *Drepanulæ* are represented by 4 species—two-thirds of tlist, and the *Pseudo-Bombyces* by 10—about one-third. Of these tlest are *Notodonta carmelita*, trepida, dictæoides and dodonea, all scar

To the *Drepanæ* I believe *unguicula* ought to be added, and feel sure that I have seen it flying about beeches, but could never at it. *Notodonta dictæa* and *dromedarius* have not been found, bu cannot believe them to be entirely absent.

The Noctuæ are very unequally represented, owing to the abdance of woods and the almost total absence of fen or marsh la The number of species found is 160—about one-half the entire li and of these the whole of the first family, the Noctuo-Bombycidæ,

1869.]

to be found, with the exception of *Ceropacha ocularis*; while on the other hand, of the 30 species of *Leucanidæ*, I have met with but 6,-5 *Leucaniæ* and 1 *Nonagria*.

The Noctuidæ are well represented for an inland place by 28 species, of which Agrotis saucia and agathina, and Noctua ditrapezium, are the best. It is worthy of remark that Noctua rubi and augur, and Agrotis nigricans seem to be decidedly scarce; also that Hadena oleracea was supposed to be entirely absent until last July, when, like Eupithecia centaureata, one specimen occurred.

The Cosmidæ, with the exception, of course, of trapezina, are absent or unaccountably scarce, the only other species found being affinis, and that very rarely. This, with the absence of diffinis, is doubtless owing to the scarcity of elms, but the Tetheæ and other species might have been expected in a country so abounding with sallow. Of the better species occurring in other groups may be noticed Acronycta alni, Neuria aponariæ, Caradrina alsines, Tæniocampa leucographa and miniosa, Dasymampa rubiginea, Hoporina croceago, Dianthæcia conspersa, Hadena conigua and genistæ, Cucullia lychnitis, asteris, and chamomillæ, Heliothis marginata and peltigera, and Stilbia anomala.

The Deltoides are well represented by 11 species of the 14 in the ist, and conspicuous among them is my favourite, Madopa salicalis, for which I worked hard, year after year, with more or less success. Both Hypenodes occur in damp woods, and Schrankia turfosalis in bogs on Woolmer Forest, where also the single representative of the next amily, Aventia flexula, is found.

In contrast to the *Deltoides*, the *Pyralides* are very poorly repreented, half the list—36—being all that I have met with, and among hese is not a single scarce species, while several that are usually most bundant are decidedly uncommon here: *Hydrocampa lemnalis*, *Botys* erticalis and urticalis and Ebulea sambucalis, for instance. The best re *Pyralis glaucinalis*, *Pyrausta octomaculalis*, *Pionea stramentalis*, and *Botys lancealis*, all scarce; *Botys pandalis* rather common in the woods; Eudorea resinalis and basistrigalis.

Of the Crambites only 28 species have been noticed, being ut three-eighths of the list, and of these 16 belong to the genus trambus, which is therefore well represented, falsellus, dumetellus, dipellus, hamellus, latistrius, uliginosellus, and selasellus being of the umber. Of the remainder of the group the best noticed were Cryptolabes bistriqa, Phycis abietella, and Oncocera ahenella; but possibly here might be taken by means of light.

214 [February,

This neighbourhood is rather rich in Tortrices-in quality, however, rather than in quantity, since only half the list have been taken-177 species; but this includes a long list of good ones. Halias quercana, Tortrix cratægana and cinnamomeana, Dichelia Grotiana, Leptogramma literana, Peronea aspersana, Ditula semifasciana, Penthina capreana, prælongana, sauciana, marginana, and carbonana, Sericoris bifasciana and micana, Roxana arcuana, Euchromia purpurana, Phoxopteryx siculana, biarcuana, diminutana, derasana, and ramana, Grapholita obtusana and gemmana, Halonota nigricostana, tetragonana, and ephippana, Olindia ulmana, Retinea pinicolana, turionana, and pinivorana Carpocapsa grossana, Stigmonota perlepidana, puncticostana, and Germarana, Dicrorampha alpinana and seguana, Aylopoda pariana, Lobesia Servillana, Eupæcilia ambiguana, curvistrigana, udana, rupicola, and subroseana, Chrosis Audouinana, Argyrolepia Baumanniana, Dubrisana, cnicana, and æneana. and two additions to the British list, Dicrorampha flavidorsana, and Eupæcilia Heydeniana.

The *Tineina* are also fairly represented, as I have observed 370 species, considerably more than half the list, and feel sure that if the genera *Gelechia*, *Coleophora*, *Elachista*, and *Nepticula* were properly worked (by breeding especially) many more would be added.

The district seems poor in *Psychidæ*, 4 species only having been met with, and of one of these—opacella—only cases, which produced nothing but a few *Ichneumons*. On the other hand, the *Tineidæ* show 50 species, including the entire genera *Lampronia* and *Micropteryæ*, all of *Incurvaria*, *Nemophora*, and *Adela*, except one species each. Of the *Gelechidæ* the genus *Depressaria* is well represented by 30 species; *Gelechia* not so well; by 48. Of the *Gracilaridæ* 20 species have occurred, and of the genus *Lithocolletis* 32.

The list of good species is so long as to be in danger of becoming wearisome, but in it are included 3 novelties—Depressaria olerella, Gelechia Knaggsiella, and Coleophora graminicolella; also Xysmatodoma melanella and argentimaculella, Ochsenheimeria Birdella, Scardia carpinetella, Tinea albipunctella, fulvimitrella, and nigripunctella, Incurvaria tenuicornis, Micropteryx mansuetella and salopiella, Nemotois cupriacella and minimella, Hyponomeuta vigintipunctatus and plumbella, Eidophusia Messingiella, Hypsolopha alpella and lucella, Harpipteryx scabrella, Pteroxia caudella, Depressaria pallorella, carduella, pimpinellæ, pulcherrimella, and pastinacella, Psoricoptera gibbosella, Gelechia lentiginosella, sororculella, basaltinella, rhombella, Lyellella, and vorticella, Macrochila fasciella, Butalis senescens, Pancalia Latreillella, Röslerstammia Erxlebella, Glyphipteryx oculatella, Echmia dentella, Tinagma resplendella, Gracilaria

falconipennella, populetorum, and phasianipennella, Coriscium citrinellum, Coleophora Wöckeella, genistæ, inflatæ, apicella, fusco-cuprella, and badii-vennella, Batrachedra pinicolella, Chauliodus Illigerellus, Laverna lactëella, Raschkiella, decorella, subbistrigella, and rhamnella, Elachista magnificella, gangabella, rhynchosporella, triatomea, and ochrëella, Lithocolletis irradiella und comparella, Cemiostoma Wailesella, Opostega crepusculella, Nepticula ntimella and gratiosella, Trifurcula atrifrontella and pulverosella.

Nearly half the Pterophorina—13 species—are found, the best peing Pterophorus punctidactylus, Loewii, tephradactylus and paludum; and the little Alucita polydactyla is, of course, plentiful.

This paper would be incomplete without a distinct notice of those pecies usually considered to belong to northern districts, but which re found on the hills and heaths of this neighbourhood, and also of hose that might be expected to be common here, but are comparatively rabsolutely rare, or even not observed at all.

Of species, more commonly northern, found here, I may mention depialus velleda and Abraxas ulmata, both rare; Tortrix viburnana, Pentina sauciana, Mixodia Schulziana, Phoxopteryx unguicana and myrtilma, Coccys vacciniana, Stigmonota coniferana, Butalis incongruella, lyphipteryx Haworthana, Elachista kilmunella, and rhynchosporella, ithocolletis irradiella, Cemiostoma Wailesella, and Pterophorus Loewii.

There are also a few apparently wanderers from the chalk, Arge Galathea, yeana Corydon, Argyrolepia Dubrisana, and Chrosis tesserana.

Of insects rare here that might reasonably be expected to be common, the llowing are noticeable:—Argynnis Aglaia, Sesia tipuliformis, Liparis licis, Anthrocera filipendula, Nola cucullalis, Eupithecia centaureata, ydraccia micacea, Noctua glareosa, augur, and rubi, Hadena oleracea, rephos parthenias, Catocala nupta, Nænia typica, Hydrocampa lemnalis, tys verticalis and urticalis, Ebulea sambucalis, Cartella bilunana, Tinea anella, Swammerdamia cæsiella, Acrolepia granitella, Chauliodus chæroyllellus, and Lithocolletis spinolella.

And of those conspicuous by their apparent absence I may mention, nerinthus tiliae, Nemeophila plantaginis, Gastropacha quercifolia, Gortyna vago, Miana furuncula, Agrotis puta, Noctua Dahlii, Orthosia ypsilon, thocelis lunosa, Cosmia diffinis, Hecatera dysodea, Polia flavocincta, udena chenopodii, Calocampa exoleta, Habrostola triplasia, Scopula lutealis, trix costana, Sphaleroptera ictericana, Stigmonota regiana, Eupecilia veana, Argyrolepia badiana, the whole of the species of the genus Cochylis (cept inopiana, which occurs among fleabane), Tinea biselliella (happy sslemere!), Plutella porrectella, Gelechia fraternella, Batrachedra praenta, and Cemiostoma scitella, not one of which I have ever met with in ther larval or perfect state.

This scarcity or absence of usually common species is, however, less remarkable when we take into account the fact, that, though so very many species are found, the great majority of them are individually scarce, so that insects are really far less abundant than in many other places. Hardly any species, comparatively, are pests, while great numbers in my list are represented by but one or two specimens.

Norwich, 10th November, 1868.

# A SECOND LIST OF GALL-BEARING PLANTS. BY H. W. KIDD AND ALBERT MULLER.

In the October number (vol. v, p. 118) of this Magazine we have attempted to give a list of indigenous and other plants known, or strongly suspected to bear galls, in Great Britain.\*

A few additions to this first list will be found in the enumeration below, which, besides, contains the names of many native and introduced plants on which, as yet, no galls have been found in these islands, but which are known to harbour such abroad. All the latter species are marked with a note of interrogation (?), but, with the kind help of other observers, we hope to be able to remove this doubtful mark, after the lapse of next season, from many of them. We have therefore postponed the publication of our descriptive lists, that we may give our readers the opportunity of communicating any discoveries they may make during the summer, and of increasing our own knowledge; though, of course, we are well aware that we cannot expect that all these plants will eventually become known to us as really possessing galls in this country too. We simply submit this list as a guide, to be followed, but by no means to be implicitly trusted; and we shall at all times be glad to hear of any additions or alterations concerning the same. The asterisk marks non-indigenous plants.

- ? Berberis vulgaris, L.
- ?\* Vitis vinifera.
- ? Alyssum, spec.
- ? Nasturtium sylvestre, Br.
- ? Helianthemum vulgare, Gaert.
- ? Arenaria trinervis, L.
- ?\* Cytisus laburnum.
- ? Prunus padus, L.
- ? Potentilla argentea, L.
- ? verna, L.

- ? Rubus idæus, L. Rubus cæsius, L. Rubus fruticosus, Auct.
- ? Rosa arvensis, L.
- ? Poterium sanguisorba, L.
- ? Pyrus communis, L. Epilobium montanum, L.

palustre, L. parviflorum, Schrel

Eryngium campestre, L.

<sup>\*</sup> In the nomenclature of native plants of this and our last list we have followed the "Londo Catalogue."

Pimpinella saxifraga, L.
 magna, L
 Heracleum sphondylium, L.
 Lonicera xylosteum, L.
 Galium mollugo, L.

Cichorium intybus, L. Serratula, spec.

Carduus nutans, L.
Centaurea cyanus, L.

Solidago, spec.
Senecio sylvaticus, L.

viscosus, L.
Campanula rapunculoides, L.

trachelium, L.

Vinca minor, L. Verbascum nigrum, L.

Veronica serpyllifolia, L.

P Orobanche rapum, Thuill.

? Nepeta cataria, L.

? Plantago maritima, L.

? Aristolochia clematidis, L. Urtica urens, L.

? Salix pentandra, L.

alba, L.

triandra, L.
purpurea, L.

viminalis, L. lapponum, L.

?\* Larix europæa.

?\* Juglans regia.

? Alisma plantago, L.

Arundo phragmites, L.

? Poa nemoralis, L.

? Festuca ovina, L.

! Triticum junceum, Auct.

In such cases where the British Flora does not possess the identical species on which the gall occurs abroad, we have mentioned the generic name only as a hint to examine all the indigenous members of the genus. P.S.—The insertion of the genus Circæa in our last list was

founded in error. We know of no galls on any of the species.

On Gyrinus wneus, Steph.—In the "Entomologist's Annual" for 1869, p. 23, Mr. Rye has noticed Gyrinus wneus, Steph., stating that it is quoted and the name adopted by Aubé, in the Iconographie, &c. This is perfectly correct, but I think that Aubé's support of Stephens' species must be shelved altogether, for Aubé's wneus is certainly not Stephens' wneus, as a glance at the two descriptions renders indubitable. In short, Aubé committed an error in citing G. wneus, Steph., as identical with the insect he himself described under the same name. How Aubé came to make so curious a mistake, it would be useless to speculate on here. G. wneus, Aubé, as noticed in the "Annual," is recognized generally as Dejeanii, Brullé, a species confined to the south of Europe. It remains then to ascertain what Stephens' wneus is, and I fear that we shall only find that this is one of the numerous cases in which Stephens' work must be considered as non-existent.

Stephens, in Ill. Mandib., ii, 95, quotes G. aneus of Leach, M.S.S., 1842. Suffrian, in the best paper which has yet been produced on the European Gyrini, informs us that he has received from Dr. Leach an example of G. aneus, Leach, M.S., and that it is a specimen of G. opacus, Sahl. Bearing in mind this, then we refer to Stephens, expecting to find a corroboration of this; but no, his descriptions indicate undoubtedly (as far as they indicate anything) that Gyrinus aneus, Steph.—G. marinus, Gyll., while G. marinus, Steph.—G. opacus, Sahl., and this, though he not only quotes without doubt Dr. Leach's aneus as his own aneus, but gives localities where Dr. Leach captured the species. Hence it is better not to notice Stephens' aneus at all, or we shall introduce to our continental friends a discrepancy in Stephens' work not at all likely to increase his prestige with them.—D. Sharr, Thornhill, 7th January, 1869.

218 [February,

Occurrence in Britain of Homalota rufotestacea, Kraatz.—I have identified an insect taken by Mr. G. C. Champion (by casual sweeping in Headley Lane, Mickleham, in the month of April) with the above-mentioned elegant species, of which a description will be found in Ins. Deutschl., ii, p. 245, 48.

It belongs to Dr. Kraatz's 4th group of the genus, in which the six penultimate joints of the antennæ are strongly transverse, the elytra are larger than the thorax, the abdomen is parallel, &c. The normal size appears to be about that of H. elongatula, and the whole insect is elongate, linear, with smooth shining abdomen, and quadrate thorax. In colour it is pitchy-brown, with the antennæ, front of head, legs, and apex of abdomen testaceous; the thorax is rufo-testaceous, and the abdomen has the 5th segment and the margins of some of the other segments usually pitchy.

Mr. Champion's insect seems to differ from Kraatz's description solely in size, it being considerably smaller than 1½ lin. (Germ.).—E. C. RYE, 7, Park Field, Putney, S.W., January, 1869.

Note on Balaninus cerasorum and B. rubidus.—Referring to my remarks upon these two insects in the "Annual" for 1869, I may add that M. J. Desbrochers des Loges, in his recently commenced monograph of the European Balaninida and Anthonomida (Ann. de la Soc. Ent. de France, viii, 1868, 358 et seq.) gives them as separate species without the slightest commentary of suspicion as to the possibility of their identity. He refers to the sexes of each, and gives for rubidus (on account of the slight sexual difference in the length of its rostrum, which he notes) the following additional male characters:—"Pygidium more exposed and pubescent, and sutural angle of elytra more marked." M. des Loges, in addition to the characters mentioned by me, states that the eyes are farther apart and the frontal depression is deeper in rubidus than in cerasorum; he also refers to a difference in the club of the antennæ of the two insects, which he describes as oval, slightly elongate, acuminate at the apex, and sub-rotundate at the base in the former, and merely as oval and contracted at each extremity in the latter.

M. des Loges adopts the name of tesselatus, Fourcroy, for the insect known to us as B. turbatus, and reinstates Marsham's glandium, which is much prior in date to venosus, Germ.—ID.

Note on the Donacia geniculata and D. lævicollis of Thomson.—The reference to these species, from the Zoological Record, to which I drew attention at page 198 of the present volume, though correct in fact, is not sufficiently explanatory.

An examination of Thomson's descriptions (Sk. Col. viii, p. 123) shews that the former of them is the D. aquatica of Waterh. Cat. (Comari, Ahrens, Suffr.), and the latter is the universally recognized D. sericea (Protous, Steph.). D. aquatica of Linnæus, which Mr. Waterhouse has identified, by means of the collection of that author, with the insect known to us by that name, is referred to dentipes, Gyll., by Thomson, who remarks that the so-called original examples of aquatica have little or no weight, since Mr. Waterhouse gives Comari, Suffr., as a synonym of that species, notwithstauding Linnæus' description clearly shows that he had dentipes before him, under which species Gyllenhal also quotes Linnæus' aquatica.

Linnæus' sericea Thomson considers inapplicable to any Swedish species, on

account of the expression "elytris subfastigiatis;\* and Gyllenhal's he rejects, because the variation in the sculpture of the prothorax allowed by that author would include both the species. Supposing, however, that these reasons were allowed as sufficient to disestablish such well-known species, there would still remain the names proposed for them by authors subsequent to Linneus and Gyllenhal; and (without endeavouring to substantiate others) Comari, Suffrian, for the one (though utterly ignored by Thomson, save in the above-mentioned reference), and Proteus, Steph., for the other, would effectually bar such sharp practice as that in which Thomson has indulged in the present instance.

M. Marmottan, in the "Excursion de 1866 dans les Vosges et l'Alsace" (Ann. Soc. Ent. de Fr., 1867, vii, p. 679), speaks of the existence of an opinion as to Comari being only a simple var. of sericea (!); he also states that, up to the time of its capture at the lake of Lispach, it was only known as occurring in Germany. "Discovered by the late James Foxcroft, in Perthshire, in May, 1854," is the statement in Ent. Annual, 1861, on its being recorded as British by Mr. Janson.—ID.

Captures of Coleoptera during the past season.—At Shirley and Wickham I have taken the following species:—Murmidius ovalis, one specimen, by sifting heaps of dead leaves, cut grass, &c., accompanied by Euthia plicata (Dr. Power appears to have long ago taken a specimen of M. ovalis, at Madingley Wood, Cambridgeshire), Mycetoporus punctus, Euplectus Kunzei, Pachyrinus comari, Ceuthorhynchus crux, Miarus campanula, Homalota angustula, divisa, triangulum, and coriaria, Olibrus pyymawus, Stenus pallipes, and S. circularis, in sand-pits. Salpingus castaneus, Phlæophthorus, and Tomicus micrographus, by beating fir branches. Tachinus elongatulus (1), by sweeping under fir trees.

At Mickleham, Homalota rufotestacea, oblita, angusticollis, and divisa, by sifting dead leaves. Aphodius porcus, about a dozen specimens, in dung. By promiscuous sweeping I have taken Apion filirostre and A. atomarium, Baridius picicornis, Trachys namus, Ceuthorhynchus cochlearia, cruz, terminatus, and alliaria, Cassida hemisphærica, Mantura Matthewsii, Gymnetron melanarium and E. noctis, Phyllotreta nodicornis and P. ochripes, Crepidodera ventralis, Thyamis gracilis, Coccinella hieroglyphica, and Psylliodes attenuata.

At Weybridge, Homalota lavana, † celata, Thomsoni, and sodalis. Smicronyw cicur and Haploglossa rufipennis, by sweeping the heath. Pachyrinus 4-tuberculatus, by sweeping in damp places. Erirhinus agnathus, on sallows.

At Lee, Magdalinus barbicornis, by beating hedges; and Xylophilus populneus, by casual sweeping. At Herne Bay, Apion Gyllenhali (in some numbers), A. simile, and Couthorhymchus terminatus, by sweeping on the coast. At Birch Wood, Nossidium, in profusion, by sifting dead leaves, and Lycoperdina in fungus. At Gravesend, Hister marginatus, by sweeping in damp places on the river banks, and Nitidula rufpes in a dead animal. At Cobham, Kent, Abdera bifasciata. At Wimbledon, Stenus melanarius (2) and Chaconema confusa (2). At Southend, Harpalus servus (2) and Chrysomela marginata, under stones on sand-hills. At Sevenoaks, Apion dissimile. At St. Leonards Forest, Sussex, Bembidium obliquum (3), on the banks

<sup>\*</sup> I am not sure that I exactly appreciate this word: but fastigium may, I think, mean "a ridge;" and the elytra of sericea can certainly be considered as exhibiting traces of transverse ridges. Or, it may mean "a gable;" in which case Linneaus would possibly refer to the arc of the two elytra.—E. C. R. († These difficult species, were, we believe, named by Dr. Sharp; and may, therefore, be relied to the constant of the two elytra.—E. C. R. (\*).

of a small pond. I have also found a few specimens of Lasioderma testacea in ginger.

A specimen of Cryphalus binodulus was found crawling on a wall near Peckham,
last autumn.

The specimens of a *Ceuthorhynchus* recorded by me with some little doubt in the Ent. Mo. Mag. as *C. urticæ*, I have since found are undoubtedly to be referred to that species.—G. C. Champion, 274, Walworth Road, S., *January*, 1869.

Note on a British example of Libellula (Diplax) vulgata.—Among some British Dragon-flies obtained at the sale of the late Mr. Desvignes' collection, I find one male of this species, extremely rare in Britain; but can give no clue as to its locality. That this common north Continental insect should be so little known here is extraordinary. From its great resemblance to our abundant L. striolata it may possibly be overlooked; yet I have, at various times and in many localities, captured and examined scores of the latter, in order to obtain its rare ally, but always without success. It may be remarked that, apart from the slight structural differences in this species, vulgata may be recognised by the reddish colouring of the principal nervures, as seen when the light is thrown on the wings in a particular direction, a character to which scarcely sufficient importance has been given.—R. McLachlan, Lewisham, 30th November, 1868.

On the spinning of the larva of a Cecidomyia.—Winnertz, in his elaborate "Beitrag zu einer Monographie der Gallmücken" (Linnæa Ent., vol. 8, p. 170), mentions that, according to his observations, no Cecidomyian larva possesses spinorgans, and he finds additional proof for this in the fact that no thread is perceptible in the silken envelopes of the pupe.

There is now standing before me a corked bottle, containing a quantity of the woody green galls on the mid-ribs of the leaves of Salia cinerea, collected in this neighbourhood in the middle of October last. From these polythalamous galls the pale orange larvæ of a Cecidomyia are now making their escape, some peacefully to undergo their metamorphosis at the bottom of the bottle, in what I consider their spun cocoons (as these are neatly attached by threads to the glass, and not loosely lying about), others of a more restless disposition forming little "points d'appui," or steps of silken ladders, all up the smooth, perpendicular sides of the bottle. Some gymnasts among them are hanging at their ease, in a curved position, on threads of their own, which are one inch, and even longer, and are attached to the top of the bottle. In short, there are at least three distinct exhibitions of spinning operations to be seen.

This ocular demonstration strengthens the misgivings I have on the statement heading this note; and it now rests to be seen whether spinning powers are the exception or the rule with the larvæ of the numerous other *Cecidomyiæ.*—Albert Müller, Penge, S.E., *November* 11th, 1868.

Capture of Dianthacia irregularis, Hufn. (echti, Borkh.) in Britain.—I have been informed that the Rev. A. H. Wratislau captured an example of this insect in Suffolk last year. The name has been in our lists before, but has long been placed among the "reputed" species. According to Gucnée, the larva feeds on the flowers (seeds?) of Gypsophila paniculata, not a British plant; but it probably also affects other Caryophyllacea.—R. McLachlan, Lewisham, January, 1869.

Macro-Lepidoptera at Rannoch.—At the somewhat gloomy close of a fine day early in July, we left the road which borders Loch Rannoch, and crossed the rough fields which lead to Camachgouran. We had reached the end of a somewhat harrassing journey, and it was with feelings of intense satisfaction that we saw the collecting-cases and portmanteaux, containing all necessaries for a Scotch campaign, laid on the stone floor of our little abode. Our kind hostesses very soon put before us a meal, such as all who have visited Camachgouran will vividly remember; and the sight of the newest of milk and the freshest of eggs\* urged us to recruit before we turned out, as we had resolved to do, for a few hours' collecting on our first night.

To one of us the scenery, and, better still, the insects, of the district were quite new; and, as we passed down the long barley-field beyond which lies the great sugaring-ground of Rannoch, the other set himself to combat the slightly gloomy impression conveyed to the mind by the grand mountain solitudes and sloping moors veiled partially, as we saw them now, by uncomfortable looking masses of cloud. Turning to the left, we reached two very different tracts of land separated by the high road: that next the loch being grass-grown, and covered with fine birch trees, while the other produces a mingled mass of heather, reeds, and fern, amongst which grow, singly or in clumps, birch, fir, and alder trees. Here, at nine o'clock, sunlight had scarce faded from the sky: dark banks of cloud were still shot with vivid lines of light; the air was soft and warm, and the loch lay motionless, almost at our feet. Some eighty trees, near the loch's edge, received an application of the sugar, and we retired among the heather and woods in the background to "moth" until the charm should have exerted its sway. Here a fine G. papilionaria crossed our path and was safely boxed, and somewhat peculiar forms of B. repandata occurred commonly.

Darkness had come on about a quarter to eleven sufficiently to warrant a first visit to the sugar; anxiously, and with darkened lamps we drew near to the first tree. Former experience told us that sugaring at Rannoch was not quite profitless. One held the net below the sweet tract of bark, the other flashed a stream of light upon it: both peered with eyes as greedy as the most ravenous polyodon. A Carabus drew back, and politely stopped eating; two "daddies" buzzed off, and banged against the lamp; and a great snail seemed to be regarding contemplatively the slimy traces of his own ascent; but there were no moths.

Tree No. 2 surprised us with a goodly sight. The brothers tincta and occulta absorbed sugar side by side, both in the loveliest of condition; N. confina, C. cubicultaris, and X. rurea having dropped in to complete the party. At the next
spread" we found tincta and nebulosa, a lovely H. contigua, R. tenebrosa, and T.
cronuba. This first night was, indeed, undeniably good. Tincta was common;
seculta, of the deepest shade of blackness, and without a rub, not by any means
are; and a fair sprinkling of duplaris, contigua, tenebrosa, festiva, conflua, cubiularis, rurea (and var. combusta), polyodon, adusta, and augur.

It was not long before we made an expedition to "Grayvel," the "lion" of the mountains in that district. On the lofty summit, a few P. trepidaria resulted

<sup>\*</sup> Milch-cows and productive hens appear to have been imported since our experience in 1865.— MoL; E. C. R.

from a determined search; S. alpinalis was not rare on the sides and on the base; C. populata swarmed among the bilberries half-way up; C. furcatellus was also common on the summit; and by good luck we secured some six or eight specimens of S. paralis. Descending, we visited a hollow on which the sun just then shed warm and friendly rays, and here E. Epiphron sported to and fro in considerable numbers, its little black form being very conspicuous against the bright green grass.

Our sugaring continued to be good throughout the whole four weeks of our stay. For some time A. tincta and occulta were of frequent occurrence, and few insects, when in faultless condition, present a more striking appearance than the latter. H. contigua and adusta were not rare; viminalis came out in some numbers; of each of N. neglecta, M. furva, C. Haworthii, C. duplaris, and O. suspecta, we secured a few specimens; and S. anomala, with the last traces of respectability rubbed out of him, one night surprised us by a visit. R. tenebrosa was common (and, as usual, far from fine), and N. conflua not scarce.

The "vulgar herd," most of them constant attendants, comprised N. augur, baja, C-nigrum, brunnea, xanthographa, plecta, and festiva; X. polyodon and rurea (both species represented by very fine varieties); T. orbona, janthina, and pronuba; C. cubicularis; A. porphyrea; and H. pisi.

The following "trespassers" came to sugar:—L. casiata, C. russata, M. fluctuata, B. repandata, M. margaritata, R. cratægata, L. pectinitaria, C. populata, L. olivata, and H. elutata.

Several other interesting captures fell to our lot among the Noctuina. H. rectilinea, and P. interrogationis, were discovered resting on stumps and stones during dull days. Of the latter, which, when fresh from the pupa, is scarcely to be surpassed for delicate shading, we accumulated a remarkably lovely series.

S. anomala occurred freely on the moors, and remained for three days in exquisite condition, after which it was almost over. From a small poplar tree we took about a hundred larvæ of C. or, many of which have now disappeared beneath the soil. A. lucernea, attracted, probably, by a great jar of treacle which stood by the front door of our cottage, paid us a visit one night, and led off a lively pursuit round the room, which lasted a quarter-of-an-hour, but by which he was in no way harmed.

E. Blandina and C. Davus were both common; and of the former, a male occurred with the fulvous patch on one side spotless.

The full-fed larve of S. carpini, L. calluna, and C. reclusa, were in some numbers here and there; nor were those of H. adusta any rarities. C. psittacata was beaten from mountain ash, and soon entered the pupa state. A. menyanthidis resulted from a sweeping of heath, and N. ziczac was to be obtained from the sallow bushes, where also C. furcula was rather common.

Among the Geometrina our captures were numerous. D. obfuscata was scarce, but a few fine ones consented to come within range; and from two females there sprang a fine brood of larvæ, at present in winter quarters. Certain larvæ beaten from alder would seem to be S. illustraria, but presented a most curious variety of colour. E. blandiata, together with E. succenturiata, occurred at Kinloch; and E cricetaria was very common in all directions. A. fumata, of course, swarmed in places; as, to an almost incredible extent, did L. cæsiata. C. munitata frequented

the sides of mountain streams, and the stony ground at the foot of Grayvel. F. brunneata was common, but exceedingly local. E. fasciaria flew rather freely at night in the neighbourhood of fir trees. L. olivata was obtainable, both at rest and flying by the loch side at night. S. belgiaria sat at rest among the heath by day, and E. tenuiata was beaten from sallows.

From the bark of a birch tree near Camachgouran we cut an empty pupa of T. scoliaforme,—rather a tantalizing operation at best.

The Bombycina were but sparingly represented:—E. russula, flying about ferns and heather; N. plantaginis, actively buzzing over the open heaths (one at a height of 2,000 feet); and a fine brood of D. fascelina larvæ marching out of the eggs, and arrested in the act of separating to pursue their respective courses in life, comprised about all our captures.

S. turfosalis, which occured on marshy land near the loch, C. margaritellus, common throughout the district, P. carbonariella, common among burnt heather, and P. pinguinalis, at rest in the kitchen of our cottage, are worth of notice among our lesser friends.

The Micro-Lepidoptera must be reserved for another paper.—George B. Long-STAFF, New College, Oxford; J. B. BLACKBUEN, Grassmeade, Wandsworth, S.W., November, 1868.

Notes on Lepidoptera at Ashford, Kent.—Chærocampa porcellus, June 13th. Euthemonia russula, not uncommon, June 12th and 13th. I obtained eggs which natched in ten days, and, feeding up rapidly, produced moths at the end of August. Scoria dealbata; this local insect was out in some numbers, and I had an opporunity of observing its habits, and seeing the females deposit their eggs on blades f grass. They are very sluggish on the wing, but fly reluctantly in the sunshine, nd, after taking a short flight, would settle on a blade of grass; then commence liding down in a series of grotesque jerks for about two-thirds of the distance, hen, bending the abdomen round, they deposited from two to six eggs in a row a the edge of the concave side of the grass. They would then fly away and repeat e process elsewhere, but when alarmed mounted high in the air and flew to a usiderable distance. I gathered several pieces of grass after seeing the eggs id on them. I believe they were most partial to Brachypodium sylvaticum, but it emed strange that when the young larvæ were hatched, and I offered them this d other grasses, they would not feed. I offered them Polygonum aviculare and tus corniculatus and major, on which last they did well. I have some at the esent time about an inch long. The slow flight and conspicuous appearance of s insect makes it an easy prey to birds. One just rising from the grass was anced upon and carried off by a bird. Stauropus fagi; I found a splendid male a beech-trunk near Wye, on the 13th June. Notodonta cucullina; a fine female a leaf of sycamore on Westwell Downs, June 10th. She laid a batch of eggs on following day, which hatched in nine days. The larvæ fed quickly on sycamore, ducing rather small moths in the beginning of August.—WILLIAM R. JEFFREY, fron Walden, Dccember 12th, 1868.

Notes on Lepidoptera at Wicken Fen.—One or two hurried visits to this locality uly last produced the following results:—Papilio Machaon; rather common on

224 [February,

the wing, and the handsome larve abundant at the same time on Peucedanum palustre. I also found the eggs on the same plant. Acidalia immutata; several specimens, from which I obtained eggs, and had the moths out again in September. Simyra venosa; the larva of this insect was abundant on Cladium mariscus and Arundo. Hydrelia unca; one larva swept up; fed for some time on Caren, but it did not live.—Ip.

Vanessa Antiopa at Godmanchester.—A specimen of V. Antiopa was taken in September last, by Mr. Gerald Hunnybun, of Godmanchester, at rest on a peartree, early in the morning. I saw it soon afterwards.—W. Jagger, St. Ives, Hunts, 6th January, 1869.

Captures of Lepidoptera at Taplow.—This summer I was at Taplow. I cannot say that I found Lepidoptera unusually abundant, though, on the other hand, I had very little time for collecting. Yet I tried sugar on several very favourable evenings, but with little or no result; in fact, within my experience there has not been a good year for sugaring since 1865. Cardui was very common towards the end of July. I neticed one thing during the very hot weather, viz., that butterflies (I speak particularly of Alexis, Megara, rapa, napi, and Argiolus) were flying about in as great abundance at seven in the morning as they usually are at eleven. This was only on the hottest days; I noticed this particularly; I went by the same path at the same hour every morning.

The only captures at all worthy of record are D. carpophaga, at light, in the middle of May; cucubali, also at light, in May and early in June, and also on July 10th (I may mention that the various species of Silene are very common near Taplow); E. venosata, on May 27th; T. cinctalis, on June 9th; P. iota, June 13th; O. sambucaria, on June 17th, i. e. earlier than usual; T. rhamnata, very common at light, between June 18th and July 13th; and L. Argiolus, June 19th and 20th.—A. H. CLARKE, 16, Furnivals Inn, E.C., November, 1868.

Peronea umbrana in Westmoreland.—I met with P. umbrana at Witherslack last autumn, but omitted to note it in the list for the "Annual." I believe this species has not previously occurred in Westmoreland.—J. B. Hodgkinson, Preston

Captures of Lepidoptera near Perth in 1868.—In looking over the captures of Mr. W. Herd (one of the most active of our collectors), I was surprised to find that he had taken a specimen of Euperia fulvago. This species has, therefore, curiously appeared in three distinct localities in Scotland in the same year. Several other species not hitherto observed in this neighbourhood have, I suppose, been developed by the long-continued heat: these are Nola cucullatella, Eubolia cervinaria, and Orthosia lota. Lycana Artaxerxes was very abundant; and among other species taken by Mr. Herd and Mr. James Stewart were Dasydia objuscata, Eupitheek tenuiata, Melanippe tristata, Coremia munitata, Cidaria silaceata, Dicranura furcula Agrotis saucia, Noctua glareosa and Dahlii, Orthosia macilenta, Cirradia xerampelina Ennychia cingulalis, &c. The season ended with Phigalia pilosaria 3, taken by Mr. Stewart, at light, on the 6th of December! Does this species usually appear so late in the year?—F. Buchanan White, Perth, 12th January, 1869.

Note on the larvæ of Heliophobus popularis, Charæas graminis, and Luperina cespitis.—Through the kindness of correspondents, I have been supplied in different years with the eggs of all these three species, and have reared the larvæ from them to full growth: and as I became acquainted with one species after another, I could not help being struck with the great similarity of appearance presented by all three when full grown.

In fact, from not being at the first prepared for this similarity among them, I found it necessary to rear each species a second time in order to make sure of the distinctive markings of each; but this having been done, and several figures having been carefully delineated, I feel I can now offer a few remarks, which may be of use in helping others to separate them.

The early history of each is similar; the straw-coloured eggs are laid in autumn, and undergo one or two changes of colour—the last not long before the larvæ are hatched-some time in spring, the exact date varying according to the

They all feed on grass-showing no decided preference, beyond that of choosing the smooth and hard grasses rather than hairy and woolly species; they feed up in summer, retire underground, and make neat oval chambers for their retreat during pupation,-and the moths appear at the latter end of summer or beginning of

When young, the larvæ all show a greenish hue, with whitish lines,—graminis and popularis being of a paler-more olive tint, while cespitis is of a bright clear full green, with the lines also of a purer white than in the other species.

I have noticed that popularis, when about half-grown, shows a very beautiful opalescent pinkish gleam of colouring about the ventral legs and belly itself which I have not observed in the other two. By degrees, in all of them, the green becomes darkened with brown, and a metallic or bronzy lustre makes its appearance, until at last the full dress is assumed, which I now proceed to describe.

In shape all are similar; the head is full and rounded, the body stout and cylindrical, thickest in the middle, and tapering towards each extremity; when disturbed they do not curl up, but bend their head and tail together on one side.

But in size, as might be expected from the moths, they differ: thus popularis, when full grown, measures full  $1\frac{1}{2}$  inch in length; cospitis  $1\frac{1}{2}$ , and graminis  $1\frac{3}{2}$ , and their bulk is in proportion to their length.

Next as to colour and ornamentation; all three are much alike in hue, and all have five conspicuous stripes arranged as dorsal, sub-dorsal, and sub-spiracular. The colour of the head is brown; and that of the back, as far as the spiracles, is a deep brown-greenish or smoky brown, bronzy and very shining; a black (or, at least, darker than the ground colour) semi-circular plate on the second segment, on which commence the dorsal and sub-dorsal stripes, in colour pale pinkish-grey, greyish-ochreous, or pale brownish, widening a little in the stoutest part of the body, and gradually narrowing again, till they converge and meet at the tip of the anal flap, which is covered with another black plate; these stripes are edged with black, and freekled with grey or brown along their middle. The spiracles are black, and immediately beneath them comes the sub-spiracular pale stripe, edged and reckled like those already described.

The legs and prologs are greyish-green or brown, the latter ringed with darker

226 [February,

brown, or with a brown spot above their extremities; the ventral surface varying in tint, but in all shining and semi-translucent.

Owing to the brilliancy of their skin, the play of light on the polished surface makes a close scrutiny indispensable to detect all the distinguishing marks of each species,—still such are to be found, especially in the region of the sub-dorsal and sub-spiracular stripes.

Popularis then has a rather pale narrow line, edged with blackish, running along midway in the space above mentioned, all the pale stripes being uninterupted. Perhaps, too, the brouzy gloss of the back is warmer in this species, while the belly, though paler than the back, is more dusky than in the others.

Graminis has also a pale line running between the spiracles and the sub-dorsal stripe. In this species the segmental folds offer a good character, being smoother, and of a different tint from the back,—in fact, catching the eye as narrow transverse bands; the whole skin also is much wrinkled transversely; and there are transverse pale streaks in the space alluded to between the sub-dorsal and subspiracular stripes, viz., three above the pale line, and two below it, on each segment. The sub-spiracular stripe is wider than in the other species (and the belly seems to have rather a pale golden-brown gloss).

Cespitis has, in the space between the sub-dorsal stripe and sub-spiracular, three ragged and irregular, rather paler, longitudinal lines, a little meandering in character, and edged here and there with darker, and being more or less obscure; and the belly and legs in this species are decidedly tinted with green.—WM. Buckler, Emsworth.

Note on the earlier stages of Limenitis Sibylla.—Some years ago this butterfly was plentiful enough in the woods in this vicinity, and thinking I could at any time be able to study its history, I postponed any attempt to obtain its egg or larva until I should have worked out other species sent to me from a distance, and which I could not hope to have always at hand.

But since that horribly cold and wet season of 1860-1, I have never seen a single specimen, and apparently, as far as this locality is concerned, Sibylla (and I may add A. Iris also) was then exterminated.

However, through the kindness of Mr. C. G. Barrett, and his indefatigable exertions whilst at Haslemere, I have been able to study and figure the larva, my notes on its appearance when full grown, as well as on the pupa, having been already published, E. M. M., vol. iv., 33; and I would now offer some account of it at an earlier stage—not as being able to disclose something entirely new, but as describing exactly what I have seen.

The hybernaculum which Mr. Barrett sent me, was placed as he describes it, "three or four buds down" from the tip of a twig shooting out from the main stalks of a great honeysuckle-bine, which climbed up a fir tree; the twig chosen for this purpose sloped a little upwards, but he could not discover any hybernaculum that could be fairly called pendulous.

The one I have before me is made of a honeysuckle leaf, which had been first partly bitten through near its axil, and then securely fixed by its two edges for about half its length to the twig from which it grew, and across which its edges were firmly bound with a spinning of strong silk; the remainder of the leaf curved

off from the twig at an angle of about 40°, being divided along the mid-rib for about  $\frac{1}{10}$  inch from the tip,—thus forming two little hare's ears as it were,—and from them up to the twig, having its two edges firmly spun together; just at the point where this half of the leaf meets the under-side of the twig there is a circular aperture, apparently designed by the larva for its egress in the spring.

As the leaf withers, the hybernaculum assumes a puckered fusiform shape, scarcely more than half-an-inch in length, being convex on the upper outline, and scarcely concave below; with the middle irregularly swollen, and the little hare's ears hanging apart; but I am sure, from the firmness with which the whole structure is fixed to the twig, it could not have swung with an independent motion of its own. Its natural appearance of a small shrivelled leaf clinging to the dry stem would readily escape ordinary observation.

On waking in April, sooner or later, acording to the season, the little occupant 'caves its abode, but goes no farther than to the upper-side of the twig immediately above the aperture it has quitted, and at this time is about three lines long, spiny, and is wholly of a reddish-brown colour.

Its first proceeding is now to cast off its winter coat, and accordingly it attaches itself to a spinning of silk on the twig, and by degrees crawls out of its old skin, which is left adhering to the silk, not shrivelled up, but still looking much like a larva.

It is now a much fresher looking creature; and after feeding on the just bursting buds of its twig, it is, by the beginning of May, half-an-inch long, brown on the back, with spines of the same colour, and yellowish-white along the sides, on which the blackish spiracles appear very distinct; just above the ventral legs it shows a reddish-brown stripe; the legs and belly are rather paler brown. In a few lays it again moults, and then assumes a miniature resemblance of the adult larva, ar formerly described.—ID.

Stray notes on Lepidoptera at Haslemere.—Being at Woolmer Forest on May 1st, and the season being forward, I had a look over the wild honeysuckle, and soon found young larvæ of Limenitis Sibylla, some only just moving from their appearacula, and still in their dark winter dress (which I leave to Mr. Buckler to describe). A week later they were growing well, and larvæ of Pericallia syringaria appeared; and I also found a bristly-looking green larva, with white dorsal lines and a geometric aspect, which however, as it grow, became an exceedingly smooth arva of a beautiful green with broad white dorsal and sub-dorsal lines, and with two thers, which I afterwards found produced lovely Plusia V-aureum in the beginning I June. In the meantime the larvæ of syringaria had turned up not uncommonly, and in most lovely variety; some very pale brown or drab, others a rich velvety own or dark red, and some of intermediate shades, while one of the light-coloured ecimens was blotched with green at the sides.

These begun to spin on May 17th, and emerged early in June. How the va can enclose itself, dorsal hook and all, in a cocoon which shall fit tightly to a proportionately small pupa, is a mystery; but so tightly does it fit, that the st skin is only shuffled off without being wrinkled up, and, as is well known, take a long tail attached to the pupa.

228 [February,

But, to return to Sibylla. By the middle of May some of the larvæ were fully grown, and about the 20th they began to spin up. My experience last year led me to put them into a warm room, where they got a good deal of sun, but this year the heat was too great, and certainly caused many of them to spin up before they were fully mature, so that some died in changing, and those bred were smaller than ordinary captured specimens. On June 3rd the first image made its appearance, and by the 20th all had emerged. On June 16th I was riding down one of its favourite glades in Woolmer Forest, and wondering whether any had appeared at large, when one glided over my shoulder, and was, to my own astonishment, secured by a rapid and almost involuntary stroke of the net. It was a most levely specimen, just out, and I should think one of the earliest ever seen at liberty in this country. A week later they were common, as also was Argynnis Paphia; and by July 11th, when in ordinary years they would have been in their greatest force, there was hardly even a worn-out specimen to be seen.

The great heat had the effect of bringing out several other species of butterflies before their usual time. Thus the second brood of Leucophasia sinapis appeared on June 29th, and that of Lycana Argiolus on July 11th. Moreover, I met with what I had never before seen, namely, second brood specimens of Argynnis Euphrosyne and Selene, and Thanaos Tages on July 15th, 28th, and 30th respectively. This must be a very rare occurrence in the cold climate of Haslemere.

I cannot tell whether Apatura Iris was tamed a little by the heat, but my friend Mrs. Fraser discovered it settling along a wood-path, on alder and chestnut bushes from twelve to twenty feet high, and there we managed to secure at different times seventeen specimens; while in another wood a magnificent female condescended to settle within reach of my net, and was secured.

Early this month a third brood of Satyrus Meyera appeared, and is still flying in plenty. The males are unusually dark.

Of moths, I think that every one who has had time for collecting this autumn, will have found many that have re-appeared unusually late. I myself have observed several species that are generally only single-brooded.—Chas. G. Barrett, Haslemere, 16th September, 1868.

Note on Hyponomeuta vigintipunctatus.—From larvæ found last autumn on Sedum telephium, I bred, in the spring, a host of Hyponomeuta vigintipunctatus.

Wishing to obtain eggs, I kept a dozen specimens alive for several days in company, but as no results appeared, turned them out, on April 25th, upon some Sedum which I had planted in the garden, and a day or two afterwards turned out several more.

From this time till May 20th—nearly a month—whenever I looked at the plants some of the moths would be visible, settled on the leaves. More utterly inert creatures I never saw. Although I watched them at all times in the day and in the evening, I never saw one move unless disturbed. If touched they would dart down to the ground, and crawl up again soon after, but without using their wings. They did not become worn nor very much faded, and must have died at last from sheer want of energy to keep alive. From all this I feared that they had not paired, and that I should not get a brood, so was much pleased in June to see

a few larvæ on the plants. These fed up very fast in the hot weather, and, before I expected it, had gone into pupa, but where I could never find out, nor did I see one of the moths of that brood; indeed, I was too much occupied at that time of the ear to notice them much, but in August the plants were nearly smothered with the webs of the second brood of larvæ, which devoured all the leaves and even attacked the seeds, and spun up (in confinement this time) just in time to escape starvation, for their brethren at large, encouraged, I suppose, by the hot weather, had utterly eaten up and destroyed the fine patches of plants upon which I had reckoned for a fresh supply of food, and it was as much as I could do to find the dead stems. Unless they were full-fed, this will make them rare next year.—ID.

Penthina capreana and other Lepidoptera bred from sallow.—Mr. Machin having given me some hints how to find the larvæ of Penthina capreana, I spent some time and pains in searching for them at the end of April. Being, however, unable to find any, even in the places where the perfect insect had occurred, I went to work and picked every rolled-up leaf and spun up shoot of sallow that I could find, till I had a good quantity, which I put into flower-pots in a cool place, and supplied fresh leaves when these dried up.

From this lot of sallow shoots I bred, early in June, plenty of Hypermecia angustana and Argyresthia pygmaella, and a fine Ptycholoma Lecheana; from the 20th to the end of the month, several Penthina capreana, Tortrix cratagana, Spilonota dealbana, Epunda viminalis, and Gelechia populella; and in the middle of July a dozen Semasia populana. The last appearance is Orthosia lota, just out, and there are still a lot of pupe, which I expect will produce only Cheimatobia brumata; but this seems a considerable number of species, with a very wide range of appearance, to be obtained from one lot of sallow shoots.—ID.

Extraordinary variety of Cynthia cardui.—I beg to send you a description of a fine variety of C. cardui, which I had the good fortune to capture on the 8th of August last, on the sand-hills at Wallasey. Fore-wings, base, and inner margin yellowish-brown, much paler than in ordinary specimens; disc yellowish-red, paler in the discoidal cell, and quite free from dark markings, except a small blotch on the costal nerve in the cell, and an additional one from the sub-median nerve hardly reaching the third inferior nerve: the apical portion of the wing and hindmargin nearly normal.

Hind-wings yellowish-red, paler near the hind-margin. The usual dark markings are totally absent, except the marginal blotches, which are normal, and the sub-marginal, which, in this specimen, are pyriform. The two nervures at the upper margin are streaked with black, and between them is a white streak. Body yellowish-brown.

Underside—Fore-wings. Base ashy-white; centre of the discoidal cell red, the remaining portion, bounded by a dark streak, pale; disc reddish-ochreous, inclining to red towards the base. There are no dark markings, except a small blotch on the costal nerve in the discoidal cell. Apical portion of the wing and hind-margin tawny, with patches of ashy and blackish scales, but the whole much suffused, and with no distinct markings.

230 February,

Hind-wings. Ground colour ashy-white. The only normal markings are those at the extreme base and the two blotches at the junction of the nervures. The spaces between the nervures are more or less suffused with brownish scales. The ocelli are distinctly outlined, and several are only indicated. Body ashy-white.

The specimen is in good condition, and as only very few specimens have made their appearance on our sand-hills this year, I may congratulate myself that the only one which I took should prove so remarkable.—E. L. RAGONOT, 130, Conway-street, Birkenhead.

A railway train stopped by caterpillars!—We think the following extract from the Melbourne "Argus" (Australian paper), of October 13th, 1868, worthy of being reprinted here:—"One day last week, the hairy caterpillars that are so destructive to barley at a late period of the year were crossing the Sandhurst railway in such numbers, a few miles from town, that they stopped a train, not by the magnitude of the obstruction, but by rendering it impossible for the engine to grip the rails, as the caterpillars were crushed beneath the wheels." We have no means of ascertaining the name of this larva, but it probably belongs to the Bombyces.—Editors.

A Rejoinder to the Rev. T. A. Marshall's Reply on the gender of Acanthosoma.—

I am much obliged to Mr. Marshall for his answers to some of my questions; but if they prove anything, they prove too much, and they place me in this dilemma, that if I accept them as satisfactory, I cannot see that our old friend Harma is anything but an adjective, and if so, I cannot detect why it is neuter, as Mr. Marshall has told us it is.

The contention is, that Acanthosoma cannot be, but that Harma is, neuter. Substitute Harma for Acanthosoma in the demonstration, ante, p. 209, and it stands thus:—

"The subject of this word is a certain GROUP of BUGS. This subject is not contained in the word Harma, but is understood. Every noun that does not contain the subject, must contain the predicate, or it has no meaning at all.\* And if it contains only the predicate, it is what grammarians call an adjective. Therefore Harma is an adjective. Q. E. D."

I venture to think that, both here and at page 209, Q. E. D. must be read Quod est dubitandum. But if Harma be really an adjective, is it not as feminine as Acanthosoma?

The same line of argument would prove with equal conclusiveness that redbreast and wagtail are adjectives; though I cannot quite make out whether Mr. Marshall considers them to be adjectives, or admits them to rank as substantives, but substantives "not grammatical or logical," tainted with "incorrectness."

As the word "illogical" did not alarm me on the former occasion, the word "ungrammatical" does not frighten me now. I care not to inquire whether it be true that redbreast and wagtail "belonged originally to the language of the vulgar

<sup>\*</sup> Mr. Marshall can scarcely say that Harma has no meaning at all. He would never have proposed to reject Hahn's significant Arma for the meaningless Harma. I have been reminded that there is a genus Harma of butterflier; which is another ground for retaining Arma.—J. W. D

and of children, and are mere familiar nicknames." Mr. Marshall admits them to be now "sanctioned by usage"—

-usus,

Quem penes arbitrium est, et jus, et norma loquendi.

Many familiar, nay many contemptuous nicknames, have become honourable and hereditary surnames. Whatever the origin of redbreast may have been, it is now the recognised vernacular name of a particular species of bird, given as a noun substantive in all dictionaries, used as a noun substantive by all writers; and I make bold to proclaim my adhesion to redbreast as a compound noun substantive, as grammatically correct, and (if logic has anything to do with the question) as logically correct as blackbird. If it be not, will Mr. Marshall favour us with the grammatical, logical, and correct name of that which in "the language of the vulgar" is called the redbreast? It seems to me an utterly untenable doctrine that the name of every bird is ungrammatical, illogical, or incorrect, if it do not contain the subject, bird. I hold thrush to be as good an English substantive as blackbird, cagle as good as butcher-bird, swan as good as lyre-bird; just as I hold shawk to be as good an English substantive as butterfly.

But let us leave the redbreast and go to the bluebeard. "We might nickname an individual Brazenbeard, having no fear of genders before our eyes. But in Latin Ahenobarba, -æ, fem., will not do for a man's name. His name, like himself, must be masculine, and accordingly we have the adj. Ahenobarbus, taking its gender from the REAL SUBJECT, from the man, and not from his beard." It is quite true that the Romans had a Domitius Ahenobarbus; it is equally true that they had an Æmilius Barbula, who was probably "downy" in more senses than one. They might equally well have had an Æmilius Ahenobarbula or Ahenobarba. I am not aware that any one has ever argued, certainly there is nothing in my previous remarks to suggest, that in Latin the name of a man could be feminine. Barbula, as the name of a Roman Consul, was masculine, as Ahenobarba would have been. There was a distinguished man, Q. Fabius Maximus by name, who had a wart on his lip, was cautious in war, and possessed a mild temper; from these peculiarities he acquired three surnames or nicknames (I care not which they are called), Verrucosus, warty; Cunctator, tarrier; and Ovicula, the lamb. And if a few more examples be required of a "slovenly idiom" which is said to be "impossible in Latin," take L. Pontius Aquila, Cn. Corn. Scipio Asina, L. Calpurnius Bestia, Martianus Felix Capella, P. Cornelius Dolabella, P. Corn. Lentulus Sura, and two or three Emperors, such as C. Cæsar Caligula, M. Aur. Ant. Caracalla, and Serv. Sulpicius Galba. The italicized feminine nouns substantive, when applied as names of men, were, of course, masculine.

The next sentence of Mr. Marshall's reply, that "words containing only some attribute of the subject must in Greek and Latin be adjectives, agreeing in gender with their REAL SUBJECT, and with nothing else," simply begs the question at issue between us. (It will be observed that there are now two subjects—the REAL SUBJECT, and the graphic or poetic subject.) I have never disputed "that golden rule of our youth, that an adjective agrees with its substantive, &c.," or urged that this rule "is to be evaded in zoological names." If Acanthosoma be an adjective,

232 [February,

by all means make it agree with its substantive. But the question is this, "Is Acanthosoma an adjective, or a substantive?" Is soma the subject, or only part of the predicate?

But though the name of an individual of the male sex must necessarily be masculine, what are we to do when we have to coin a name-not for a single individual of one sex-but for a collection of individuals, containing males and females, if not neuters also? The name of a group of bugs, unless it contain the real subject, bug, must, according to Mr. Marshall, be an adjective, agreeing in gender with that real subject. But there are real bugs male, and real bugs female. Are we to call the male bug Acanthosomus verrucosus, and the female Acanthosoma verrucosa? Mr. Marshall can scarcely mean this. We must then have some name for the insect which is independent of the sex or gender of the individual. Are we to understand Coris or Cimen, according as the name we give to the genus is derived from the Greek or the Latin? in other words, are we bound to make the name of every genus of bugs of the masculine gender? This is a new principle of nomenclature, quite at variance with the practice hitherto. And if not Coris or Cimex, what is the imaginary substantive, meaning bug, that is "understood, or supposed to be understood?" The Greek Coris, which Mr. Marshall tells us is masculine,\* and the Latin Cimex, which also is usually masculine, though sometimes made feminine, were used collectively to include all bugs, females as well as males. We are guilty of no greater violence when we call a genus of bugs, including both sexes, by a masculine name, or when we call another genus by a feminine name.

Are we to abandon the practice of taking for names of genera the names of persons and places, which I have always imagined to be nouns substantive? Or do Cercyon,† Lucanus, Rhætus, Euterpe, and Europa—for want of the subject, beetle—or Harpalyce and Phigalia—for want of the subject, moth—become adjectives, when taken for the names of Coleoptera and Lepidoptera respectively?

Mr. Marshall refers to "Lonchosternus, Dasysterna, Dactylosternum; Barynotus, Aloconota, Cyclonotum; Stylosomus, Ægosoma; Amblystomus, Sericostoma; Chasmatopterus, Dictyoptera, Liopterum. Those in italics are, according to Mr. Dunning, substantives neuter, because Sternon, Noton, Soma, Stoma, and Pteron, are neuter.‡ What shall we say, then, for the others? They must be equally neuter, notwithstanding their terminations, or what becomes of the rule of the German illuminato? Or if some of the above words are substantives, and some not, will Mr. Dunning kindly point out which is which, and why?" The last question ought to have run thus:—"If some of the above words are neuter, and some not, will Mr. Dunning kindly point out which is which, and why?" The sequel will answer the question in both forms.

<sup>\*</sup> Yet there is some authority for the feminine gender; so that, after all, Corimelana is not quite so black as she has been painted.—J. W. D.

<sup>†</sup> By the way, why do Coleopterists make Cereyon neuter? Cereyon was the son of somebody, and was slain by somebody else; after the exploit of the latter somebody, the corpse of the robber, perhaps, had little masculine vigour left, but this is scarcely sufficient ground for making the genus Cereyon neuter,—J. W. D.

<sup>[</sup>This is corrected in Gemminger and Harold's Catalogue,-EDS.]

<sup>†</sup> I presume Mr. Marshall will agree with me that Dactylosternum, Cyclonotum, and Liopterum, are neuter, whatever may be the gender of Ægosoma and Sericostoma.—J. W. D.

But before doing that of which I ought to "see the impracticability," may I inquire, who is the "German illuminato," and where and how has he enunciated his "rule?" So far as my argument is concerned, it by no means follows that because Soma is neuter, therefore Stylosomus is neuter; or that because Pteron is neuter, therefore Dictyoptera is neuter. I have never argued that every compound name, into the latter member of which there enters some modification of, or some word formed from, a neuter noun substantive, must necessarily be neuter, notwithstanding its termination. On the contrary, I say that (whether they be substantives or adjectives) Lonchosternus, Barynotus, Stylosomus, Amblystomus, and Chasmatopterus, are masculine; Dasysterna, Aloconota, and Dictyoptera, are feminine; and Dactylosternum, Cyclonotum, and Liopterum, are neuter. And the reason why? Because Latin nouns ending in -us are (as a rule, with few exceptions) masculine; Latin nouns ending in -um (at this moment I do not remember an exception) are neuter.

But I further say that Egosoma and Sericostoma may be either neuter or feminine, according as we regard them as substantives or adjectives. The Graco-Latin neuter substantive denoting "spine-body," and the feminine gender of a Graco-Latin adjective denoting "spine-bodied," are identical in form; and Acanthosoma may be either one or the other. But neither Acanthosomum on Acanthosomum can be "spine-body."

Reverting to the argument that no name of any group of bugs can be a noun substantive unless the name contains the subject, bug, let me ask, how comes "bug" to be a substantive? The bugs are only a group of insects. By parity of reasoning, no name of any group of insects can be a noun substantive unless the name contains the subject, insect. Ergo, "bug" is not a substantive! Similarly "insect," "bird," "fish," "man," "animal," are not nouns substantive!! And I suppose we should ultimately conclude that there is not such a thing as a noun substantive at all!!!

If I were not afraid of making Mr. Marshall's hair stand permanently on end, I would suggest that the name of every genus is a noun substantive. I maintain that a naturalist who has to name a new genus is at liberty to take any one or more Greek word or words, or any one or more Latin word or words, and to apply to the genus such one word or a compound of such two or more words formed by analogy with the compound formations of the Greeks and Romans respectively; that the gender of the generic name is independent of the gender of the Greek or Latin word for bug, bird, or whatever the group may be; that, whether the word taken or coined was originally a substantive or an adjective, or a compound of each, from the time of its assumption as the name of the genus, it becomes and is a collective noun substantive. It used to be said that "the name of whatever we can think of or speak about is a noun substantive;" whilst an adjective is a word added to a substantive to signify some quality or circumstance thereof. I think of a group of bugs, and I wish to speak about that group; I give it a name; the group comprises individuals of two genders; the name of the group can have but one gender; the gender of the name must be independent of the gender of the group, which has no one gender, independent of the gender of the individuals forming the group, which are of two genders; the name is a noun substantive, and has a gender of its own.

234 [February

I apprehend that all names of things were originally derived from some attribute of the things. In the inception of language, names of qualities would naturally precede the names of things; nouns adjective would precede nouns substantive. When a word denoting some particular quality was once applied to a particular thing, in process of time the reason for the original application was lost sight of, nevertheless the word adhered to the thing, and became the name of the thing. The adjective became a substantive. In many cases, not only the reason for, but the very meaning of, the name, is lost, so that we feel some difficulty in grasping the notion that the now unmeaning name must, at some time or other, have been a significant word.

The process of the formation of new substantives in the manner above indicated is continually going on amongst us, and may be detected by comparing the usage of the same word at different epochs. Take, for instance, the Latin bidens, originally an adjective, applicable to any animal possessing a certain formation of teeth; as time wore on, it came to be confined to the sheep; with the older writers it was an epithet, in later days it became a substantive, a synonym of ovis. Take, again, denarius, originally an adjective "containing ten;" then nummus denarius, the coin containing ten asses; soon nummus was dropped, denarius became the substantive name of the coin, and was retained, though the coin was afterwards made to contain eighteen asses. The Greek entoma (zoa, understood), and the Latin insecta (animalia, understood) were no doubt adjectives at first; but afterwards became recognised as, and were deemed to be, substantives. Similarly the names of the subdivisions of Entoma or Insecta are nouns substantive, and, moreover, substantives of different genders; thus—as groups of Entoma, n., we have Oistros and Coris, m., Melissa and Myia, f.; and as groups of Insecta, n., we have the corresponding Estrus and Cimex, m., Apis and Musca, f.

By whatever process "bug," the name of a group of insects (not containing the subject, insect), became a noun substantive, by the same process may "spinebody," the name of a group of bugs (not containing the subject, bug), become a noun substantive. In whatever way or in whatever sense Coris and Cimex are substantives, in the same way and in the same sense (I submit) may Acanthosoma be a substantive.

I am therefore still unable to agree that Acanthosoma Must be an adjective. But, consistently with the views here propounded, it is still open to me to agree with Mr. Marshall that Acanthosoma should be treated as feminine.—J. W. Dunnine, 24, Old Buildings, Lincoln's Inn, 11th January, 1869.

A Further Reply to Mr. Dunning's Remarks on the Gender of Acanthosoma, &c.—
There are a few other points in Mr. Dunning's ingenious paper upon which I should
like to speak, if it can be done within moderate compass. I will endeavour to confine myself to such of his propositions as do not depend upon the principles which
I last stated, although it may hardly be possible altogether to keep within these
limits.

1. Mr. Dunning says (at p. 283):—"So far as I am aware, the practice of making genera which end in -toma, -oma, or -soma, neuter, has been applied only in cases where the name of the genus is a compound of two Greek words of which

the latter is a noun substantive of neuter gender; as Ortho-stoma, Diplo-doma, Acanthosoma."

My original objection was meant to include a class of words like *Phanerotoma* dentatum, *Pentatoma* bipunctatum, nigricorne, vernale, *Tapinoma* erraticum, and so forth. The list could easily be extended, but these examples will suffice. It is plain that *Phanerotoma*, *Pentatoma*, &c., cannot be excused upon the ground of their ending with a neuter substantive, and consequently that their adjectives are made neuter at the expense of the ordinary rules of gender.

2. "Is there any reason why a compound noun substantive may not be taken for the name of a genus, when a simple noun substantive may? If Harma will do, why not Chalcarma? If Phasma, why not Neophasma?"—I see no objection to either word.

It appears that all zoological names are capable of being referred to one or other of the two following classes.

A. SUBSTANTIVES, which may be, as to their form, either simple or compound; and as to their meaning, either literal or figurative. Ex. gr.

a. Simple or compound substantives taken literally :-

UrsusBear.	TragelaphusGoat-deer.
CynomyiaDog-fly.	PsammosaurusSand-lizard.
HaliaëtusSea-eagle.	LampyrisGlow-worm.

b. Simple or compound substantives taken figuratively :-

Ctenidiumlittle comb.	Scymnusa whelp.
Micrornixlittle bird.	Sphæridiuma little ball.
Helluoglutton.	Mormolycea hobgoblin.
Nautilussailor.	Phasmaan apparition.
Machaon )	Neophasmaa new Phasma.
Artaxerxesproper names.	Harmaa chariot.
Feronia )	Chalcharmaa brazen chariot.

Endocephalus	Having the head turned inwards.
Platycephala	Broad-headed.
Lepidoptera	. Having scaly wings.
Quadrumana	. Four-handed.
Tetratoma	.Quadripartite.
Otiorhynchus	.With an auriculated rostrum.
Hypophlœus	Living under bark.
Haplocnemus	.Having the tibiæ simple.
Epilachna	.Coated with down.
Aphanogmus	.Indistinctly sulcate.
Polyphylla	.With multifoliate (antennæ).
Acanthosoma	.Having a spiny body.
Trigonaspis	. Having a triangular scutellum.
Chasmatopterus	.With gaping elytra.
Lasioptera	
Liopterum	
Uropteryx	.Having candated wings.

The principles upon which the interpretation of such words depends belongs to Logic and not to grammar. Some of them may grammatically be taken either for substantives or adjectives, as Trigonospis. But is is plain that the author here meant to refer to the triangular scutellum which is an attribute of the insect. Hence the word is to be taken as an adjective. To call such an insect a triangular shield, would be far fetched, and inappropriate. Similarly if there be any genus named Chalcharma (better than Chalcarma), it must be taken as a substantive used metaphorically, "Brazen-chariot,"—which includes the whole subject. For to speak of an insect as having a brazen chariot, or brazen-charioted, like one of Homer's heroes, verges upon absurdity. And herein fails Mr. Dunning's analogy between Chalcharma and Acanthosoma, both formed alike, grammatically; that logically, the former contains the subject by a metaphor, while the latter does not, i. e. it is an adjective.

#### 3. Mr. Dunning says (p. 184)

[If Micronis had been applied to a genus of birds, Mr. Marshall's Dipsocoris argument would have run thus:—"MICRONNIX = little-bird, a compound nous substantive, which, therefore, must have some gender or other; it takes its gender from the subject (bird); the word involves both subject and predicate; the subject is a bird, whereof it is predicated that it is little." If, instead of a genus of birds, the name were given to a genus of moths—as, in fact, the name Ornis has been—then, as a moth is not a bird, the argument would be that "in Micronis the subject is not contained, but understood; of this subject it is predicated that it is like a little bird; bird is not the subject, but part of the predicate." The result is, that as the name of a bird Micronis is a substantive, with a gender of its own—as the name of a moth, Micronis is an adjective, depending for its gonder on some imaginary substantive understood!

I am afraid that the above passage involves a fallacy, which leads in one case to a wrong conclusion. The error lies in the statement that if *Micrornix* be used as the name of a moth, then, because a moth is not a bird, *Micrornix* does not contain the subject, i.e. is not a substantive. The fact is that the word *Micrornix*, whether used of a bird or a moth, contains the subject equally,—in the former case literally, and in the latter metaphorically. See above, paragraph 2, A. b. I submit then that we have in the above passage an ingenious mixture of two syllogisms, in each of which *ornix* bears a different sense; (1) Literally, *Bird*; and (2) Metaphorically, *Moth*. Exhibiting these syllogisms separately, as follows, we obtain for each a just conclusion:—

Micrornia (Bird) is a substantive.

Every substantive contains its own subject.

Therefore Micrornia contains its own

Therefore Micrornix contains its own subject,
viz. Bird.

Micrornix (Moth) is a substantive.

Every substantive contains its own subject.

Therefore Micrornix contains its own subject,
viz. Moth.

The form Micrornis would be preferable, as orniz is only a dialectic variation, and comparatively unusual.

4.—Acanthothorax and Uropteryx are adjectives, whose gender, as remarked by Mr. Dunning, is not shewn by their termination. The nomenclator in this case

would have to be guided by his own good taste, and if he felt himself at a loss, he might remember a precept, devised to meet a similar difficulty, viz., That the masculine gender is more worthy than the feminine, &c., &c. This would be my argument for making the names masculine. For making them feminine or neuter I should not be able to give any reason.

- 5. As to the word Harma, chariot,—I adopted the reading because "chariot" is an apt similitude for the form of the insect. The only meanings of Arma are (1) A medical term for patient's food, and (2) Union of the sexes. Neither of these significations are likely to have been in the author's mind. The Latin word, meaning "weapons," is still less reasonable, on account of its being plural.
- 6. If there were an Acanthosoma which affected the ground ivy, I should, as Mr. Dunning rightly infers, make its gender to be Acanthosoma Glechomatis.
- 7. I am unable to propose any remedy for Chinese and other unclassical names generally current, or for badly-constructed words like *Derephysia*. It would require a much higher authority than mine to procure their rejection, or probably the concurrent authority of some of the great "head-centres" of entomology. But if by calling attention to them I could be the humble instrument of checking the formation of such names for the future, I should consider that I had effected a good thing.
- 8. Mr. Dunning quotes the word Hippopotamus as a case in point, subversive of the rules for compound terms which I brought forward. I need hardly say that these rules are not of my invention, but are to be found in many grammatical works, and apply to languages generally, as being essential to the process of human thought. Hippopotamus means Horse-River and not River-Horse. It is an incorrect compound, used only by Strabo and Galen, and must have sounded strangely to Greek ears. Better writers called the animal Hippos potamios. The wart-hog of South Africa in the Regent's Park probably does not know that he stands ticketed as a River (Chæropotamus), instead of a porcine animal. Nevertheless we shall continue to speak of the Hippopotamus without much self-reproach, and may throw the blame upon the blundering ancients, who ought to have known better.
- 9. Mr. Dunning asks the question (p. 186) whether "Rhinoceros is to be turned into Ceratorhinus?" For no reason that I can see. Both words are correct, and are equivalent terms, differing only in their arrangement of the parts of the predicate.

Rhinoceros=Having a nasal horn.

Ceratorhinus=Having a horned nose.

Like Rhinoceros is Monoceros, having a single horn, and Diceros having two horns. In a Greek author we have Diceros Selene, the two-horned Moon. Such words are of course adjectives, and, like our names of genera, only become substantives conventionally.

10. As to the difference between such names as Acetropis, Gonianotus, &c., and the classical forms not compounded with an o, Œdipus, Calliope, &c. The subject is much too extensive to be entered upon here, and is of little interest to entomologists. They will seldom be wrong in compounding names from Greek nouns by the intervention of the letter o, elided before a vowel. Those who wish

238 [February

to know more must consult Greek grammars, and Donaldson's New Cratylus, pp. 491—529, where the various exceptions are fully treated. Lastly, the distinction of the endings -odes and -oides (not oides) is unimportant, as pointed out by Mr. Dunning. The former termination is (in Greek) only a contraction of the latter. The canon mentioned by me was laid down by Burmeister, I believe, but have not the book at hand. I shall be glad to leave the word *Etiodes* as it stands.

I may take this opportunity of objecting to another class of words, scattered sparingly through entomological works, viz., formicaformis, muscaformis, tipulaformis, for formiciformis, musciformis, and tipuliformis. I have also noticed athaliaged for athaliaged at a superior at a sup

ENTOMOLOGICAL SOCIETY OF LONDON, 4th January, 1869. H. W. BATES, Esq., F.Z.S., President, in the Chair.

W. F. Kirby, Esq., of the Royal Dublin Society (formerly a subscriber), and E. Holdsworth, Esq., of Shanghai, were elected Members.

Mr. Bond exhibited examples of Vanessa urtica of very small size; he had bred a large number from one brood of larva during 1868, and attributed the diminutiveness of the image to rapid development owing to the hot season. He also exhibited varieties of Apatura Iris and Pamphila comma.

Mr. Meek exhibited two beautiful specimens of Dianthweia Barrettii, captured by Mr. C. S. Gregson, in Ireland.

Mr. W. C. Boyd exhibited an example of Crambus myellus, captured by his cousin, Mr. Adam Boyd, near Blair Athol.

Mr. Horne, late judge in N. W. India (present as a visitor) exhibited a fine series of the nests of many species of Indian bees and wasps, accompanied by specimens of the insects forming them, and by drawings made from the fresh nests. Among them were nests formed in the hollow interior of the handle of an earthenware vase, in the interior of the hay-nest of a mouse, attached to a signetring, &c., &c. Mr. Horne remarked on the abundance of these insects in India, and on the rapidity with which they seized upon available positions for nest-building, such as the interior of door-locks, &c.

Professor Westwood said that apropos of the bees-nest in the interior of a mouse-nest, he had observed a contrary instance in his own bee-hives, a mouse having chosen one of them as a place wherein to build its nest; apparently killing the bees, but devouring only their heads.

Mr. Eaton sent a note on the structure of the ovipositor, bearing upon the writings of Dr. Packard, M. Lacaze-Duthiers, and his own, on that subject.

Mr. F. Smith read a paper upon the affinities of Sibyllina, an anomalous Hymenopterous genus described recently by Professor Westwood. Mr. Smith combated Prof. Westwood's suggestion that the genus pertained to the Vespida, and was inclined to refer it to the Ichneumonida, as having some affinity with Anomalon, &c. Prof. Westwood remarked that Mr. Cresson had recently described a genus which he believed to be identical with Sibyllina, and also referred it to the Ichneumonida.

Professor Westwood exhibited drawings of various anomalous forms in Coleoptera, and of an Ichneumon, the larva of which was an external parasite on a spider.

Mr. E. Saunders read "Descriptions of nine new species of Buprestida."

ON A NEUROPTEROUS INSECT FROM N. W. INDIA, BELONGING TO THE GENUS DILAR.

#### BY R. McLACHLAN, F.L.S.

The species of the singular genus Dilar are apparently extremely rare, and until recently I had never seen a representative of that genus, and do not think that any existed in this country, either in private or public collections. Up to the present time five species have been described. 1. D. nevadensis, Rambur, from the Sierra Nevada in the South of Spain (the typical species); 2. D. meridionalis, Hagen, from the same locality (unique); 3. D. turcicus, Hagen, from Armenia and Syria; 4. D. parthenopæus, Costa, from Naples, perhaps identical with No. 3; 5. D. Nietneri, Hagen, from Ceylon (vide Hagen in Stett. Ent. Zeit., 1866, p. 291 et seq.). Within the last few weeks I have found another species, from North-West India, in a collection made by Mr. Horne, but only represented by males. All the species are much alike, differing chiefly in the formation of the anal parts, a character not easy to discriminate in dry specimens.

The males of *Dilar*, which at first sight look much like species of *Hemerobius*, are especially remarkable for longly pectinate antennæ, which are found elsewhere in *Neuroptera* only in some species of *Chauliodes.*\*

Mr. Horne's insect I describe as follows :-

## DILAR HORNEI, n. sp.

Fusco-castaneus, abdomine pilis longis pallide-flavis vestito. Antennæ griseo-fuscæ, plus minus 27-articulatæ; articulis 4—21 singulatim processú elongato instructis. Alæ anticæ albido-griseæ, griseo confertim punctatæ vel reticulatæ; punctis duobus discalibus (quorum unum in medio, alterum basin versus situm) punctisque circum marginem apicalem, saturatioribus: posticæ punctis præter disco-medianum fere obsoletis. Pedes flavi, pilis longis concoloribus vestiti. Abdomen fuscum; valvis analibus fimbriatis, flavis.

Long. corp. 2''; exp. alar. 11'''.

Head castaneous, sometimes slightly suffused with blackish; a large rounded tubercle on each side of the middle, and the raised hinder margin, yellowish with yellow hairs; face fuscous, a deep and broad transverse sulcus before the clypeus; mandibles prominent, yellow, produced into an acute piceous point. Antennæ grey, with short greyish-yellow pubescence; about 27-jointed; basal joint fuscous; third joint with a short tooth, the 4th to the 21st, each with a long

<sup>\*</sup> Euptiton, which is founded on a figure in Drury, and is represented with pectinate antenna, is most probably mythical.—R.  $McL_{\bullet}$ 

flexible process, twice longer than the individual joint. Meso- and meta-thorax usually, but not always, with the surface of the lobes somewhat blackish.

Wings greyish-white: anterior wings with very numerous short transversely-elongate spots, which are more or less confluent; in the middle of the disc is a larger and darker spot, which bears in its centre a horny blackish dot most visible on the under-side; towards the base is another similar but smaller spot, and there are also larger and darker spots round the apical margin; neuration yellowish, the veins and margins shortly fringed with yellow: posterior wings with the darker spots almost obsolete, more evident in the apical portion; the pterostigmatical region yellowish-grey; a vestige of the median dark spot with horny centre, as in the fore-wings; the fringe of the inner margin much longer, yellow.

Legs pale lemon-yellow, with long yellow pubescence; the knees and tarsal articulations marked with blackish.

Abdomen fuscous, densely clothed with long pale yellow hairs. The last dorsal segment apparently carries in the middle a very small



Apex of abdomen of Dila

yellow lobe: the lateral valves are very large, concave, yellow, and with long yellow fringes; in the middle, above, they seem to be joined together by a band which leaves an open space between it and the margin of the last segment, in which space is seen the small lobe mentioned above; when viewed from above, these lobes appear to end in a long curved process, which is really only the in-turned upper mar-

gin; when viewed from beneath, they form two large rounded lobes, not connected in the middle: the parts in the cavity formed by these lobes are piceous, with two small triangular piceous appendices, the tips of which are somewhat mucronate and turned outwards.

I have seen three males, taken by Mr. Horne.

20, Limes Grove North, Lewisham, S.E.; February, 1869.

# DESCRIPTION OF A NEW SPECIES OF PHILHYDRUS. BY D. SHARP, M.B.

I can find no description of the following species of *Philhydrus* (*Helochares*), which is confounded in our collections with *H. lividus*.

## H. PUNCTATUS (nov. spec.).

Oblongo-ovalis, suprà fusco-testaceus, capite, palporumque apicibus nigricantibus; confertim, æqualiter, sat fortiter punctatus.

Long.  $2\frac{1}{2} - 2\frac{3}{4} \ln$ 

Mas, tarsorum unguiculis elongatis.

I give a diagnosis of *H. lividus*, in order to show the characters of the two species.

## H. LIVIDUS, Forst.

Oblongo-ovalis, suprà livido-testaceus, palporum apicibus angustè nigricantibus; confertim vix fortiter punctatus, elytrorum apice subtiliter parciusque punctato.

Long.  $2\frac{\pi}{2}$ —3 lin.

Mas, tarsorum unquiculis elongatis.

H. punctatus, though generally distributed in England, appears to be not so common as H. lividus. I have specimens from Whittlesea, Mere, Cambridge, London, and the New Forest.\*

Thornhill, Dumfries; 12th February, 1869.

#### NATURAL HISTORY OF LYCENA EGON,

#### BY WILLIAM BUCKLER.

On the 31st July, 1867, Mr. C. G. Barrett, then at Haslemere, most kindly sent Mr. Hellins and myself some eggs of *Ægon*, which, by an ingenious contrivance, he had induced a 2 to deposit on twigs of heather.

Being in doubt as to the proper time for their hatching, I kept those I had in an ordinary room for daily inspection until the approach of winter.

On the 23rd February, 1868, Mr. S. Hudson obligingly forwarded me three eggs, part of a small batch he had obtained from a \$\varphi\$ during the previous summer, near Epworth, and with them the welcome intelligence that he had satisfied himself by experiment that the larvæ were alive and stirring within the shells, and that he expected them shortly to hatch.

I immediately removed all I had to a cooler place than they had previously been in, so as to retard their progress until something could be learned about the proper food.

Considering the small size of this butterfly, the egg is rather large

<sup>\*</sup> It is curious to observe how all our species of Philhydrus run in pairs, viz., maritimus, testaccus; melanocephalus, nagricans; marginalis, oralis; and leadus and the above described insect. Of my short series of leadus about one-half answer well to Dr. Sharp's description of punctatus. I fancy I perceive in them that the eyes and palpi are more bulky than in lividus.—E. C. R.

242 [March,

in proportion; it is white in colour, of a circular form, flattened and depressed in the centre both above and below, ribbed and beaded boldly at the sides, and from thence more finely by degrees to the centre.

The egg does not change colour, but retains its pure dead-white appearance even after the exit of the larva; a small hole showing like a black spot on the side of the shell alone betraying the escape of the little creature.

Mr. Hudson informed me of one of his larvæ being hatched on the 29th February, which was followed by others on the 3rd March; and all were placed on various little plants from the locality where the parent butterfly had been taken, but from want of the right food, and partly by accidents, they were starved and lost.

On the 28th February Mr. Hellins reported that one larva had hatched, and that it soon after died; and another on 6th March, which was placed on heather, Lotus corniculatus, and one or two other vetches, but with no success. On the 18th March two of my eggs hatched, and the larvæ were placed with a variety of food, but they died without eating, and others soon followed in the same way, with Mr. Hellins and myself. However, shortly after, Mr. Hellins acquainted me with the fact of his having seen one distinctly eat a tiny hole in the leaflet of a small vetch, Ervum tetraspermum, growing in his garden, and he sent me one of the plants, and upon this, for some days, the young larvæ as they were hatched were placed; but instead of eating they wandered away or fell off into the earth below, where it was impossible to find them.

Meanwhile we were not idle in ventilating the subject amongst our friends, in what seemed a forlorn hope of obtaining a clue to the proper food-plant, when fortunately at this critical juncture, Mr. Doubleday kindly gave us the benefit of his excellent memory and observation, in recalling the fact of his having seen, twenty years ago, in some place, this little butterfly flitting over Genista anglica and Ornithopus perpusillus, and that on the latter he had noticed some females alight.

In the midst of my trouble at losing the young larvæ daily, and being unable to find the desired *Ornithopus*, I fortunately happened to mention the subject to Dr. F. B. White, of Perth, and he with great good nature and promptitude despatched me a tin full of the plants. These were at once potted and sprinkled with water, the remaining six or seven eggs put on them in a sunny window, and in a day or two, by aid of a lens, the young larvæ were soon detected. By the 3rd May some small transparent blotches were visible on the leaflets, on which

they had fed, and from that time all went well: and after Mr. Hudson's attention had been directed to *Ornithopus perpusillus*, he satisfied himself that in his locality the butterfly did not occur away from that plant; so it seems there is little doubt of its being the natural food.

When first hatched the larva is about three-fourths of a line long, thick in proportion, of equal bulk and rounded at either end, hairy and of a dull bluish-green colour, its powers of locomotion of the very feeblest description.

By May 3rd they had become rather more than a line in length, of a drab colour, and hairy like the leaflets on which they were feeding. By May 29th they had grown to about a quarter to three-eighths of an inch in length, eating not through the leaflets, but only the green cuticle: at this time they were of a deep yellowish-grey, and the dorsal stripe blackish olive edged with whitish, and a whitish line along the lateral ridge above the legs; the sub-dorsal stripe being triple, i. e., two lines of blackish-olive with a whitish-grey one between them. The surface generally studded with minute blackish points, each bearing a fine short hair.

By June 11th to 15th they had all assumed their last coats.

The full-grown larvæ is about seven lines long, thick in proportion, and of the usual onisciform or Lycæna shape.

The head small, and retracted when at rest or alarmed, the second segment the longest, rounded, and very slightly flattened above; the others as far as the tenth with raised prominences on each side of the back, and a dorsal hollow between them; the sides sloping to the lateral ridge; the ventral surface rather flattened; the legs all placed well underneath. The three last segments without dorsal ridges, and sloping gradually to the sides and anal extremity, their sides rather concave, a very prominent wart on each side of the twelfth; the segmental divisions not observable on these last, but well cut on all the others.

In colour the larva is now a bright yellow-green, with the dorsal stripe blackish-brown edged with whitish from the beginning of the 3rd to end of the 10th segment, it is widest on the 3rd and 4th, being on them of a rather rounded lozenge form, with a whitish dot near the edge on each side; a dull dark-brown small plate in front of second segment, and a broad semi-lunar shaped blotch of same colour a little behind and divided in the middle by a fine line of the green ground colour. The dorsal stripe on the eleventh segment becomes broad and squarish, but resumes its linear shape on the twelfth and thirteenth.

The sub-dorsal line is visible from the beginning of the third to the end of the eleventh segment as a greenish-yellow line running between 244 [Marcu,

two green ones darker than the ground colour. At the bottom of the sides along the lateral ridge, commencing on the third segment and continued round the anal extremity is a whitish line. Between the dorsal and sub-dorsal, on segments three to ten, are faintly paler oblique lines of yellow-green, viz., one on each segment sloping downwards and backwards; the warts on the twelfth segment are very often suddenly projected considerably, and then a circle of fine short hairs is visible on their extremities. The surface of the body is also clothed with similar hairs. The head is black, having the base of papillæ and a streak across over the mouth of buff colour. They had all turned to pupæ by 24th June, one of them slightly attached to a stem of the plant by the anal extremity, and lying, like the others, amongst a few loose threads at the very bottom of the stems and partly in the earth. The pupa is about five lines long, smooth but without polish, the top of the head slightly projecting, the thorax rounded, the abdomen plump, curving on the back outwards and backwards towards the tip, which is hidden in the larva skin; the wing-cases prominent and long in proportion; it is of a dull green tint, with a dark brown dorsal line of arrow-head marks.

The butterflies appeared July 5th to 17th.

Emsworth: February, 1869.

## NOTES ON SOME BRITISH SPECIES OF EUPECILIA.

BY CHAS. G. BARRETT.

Although my friend Mr. McLachlan, in concluding his valuable paper on the genus Eupœcilia, in the Annual for the present year, states that the descriptive part is "sufficiently well done in Mr. Wilkinson's work," I think there is still room for a few words on the distinctive characters of ciliella (ruficiliana), subroseana, and their allies, the two new species noticed by Mr. McLachlan especially, because I have found that great confusion exists in collections among them, and also because, in the case of subroseana, the localities given, both in that work and in the Manual, appear to belong to ciliella and certainly not to subroseana.

I will therefore endeavour to point out the distinctive characters of the four species—subroseana, Heydeniana, Degreyana, and ciliella, between which the confusion seems principally to exist, and may in the first place explain it by the fact that they all have certain leading characters almost alike; for instance, all four have the upper part of

1869.1

the head and thorax very pale ochreous or whitish, the ground colour of fore-wings whitish tinged with grey or ochreous, and a fascia rising on the inner margin of fore-wings a little before the middle, and crossing the wing nearly parallel with the hind margin. Briefly I would describe them as follows:—

- Subroseana, Haw. Fore-wings broad, costa and hind margin rounded. Ground colour whitish-ochreous, tinged with reddish beyond the middle, and with the entire apical portion reddish-brown. Fascia broad, reddish-brown, not very oblique, and barely touching the costa. Apical fringes dull ochreous spotted with reddish-brown. Hind-wings dark grey.
- Heydeniana, H-S. Fore-wings broad, costa and hind margin rounded, whitish, delicately reticulated with grey, and with a faint rosy or pinkish suffusion, especially towards the apex. Fascia greyish-brown, slender, slightly interrupted and bent back near the costa. Apical fringes very short, ochreous dotted with grey, and with a distinct dark line along their base. Hind-wings pale grey.

In this species I cannot entirely confirm Mr, McLachlan's description. The rosy suffusion is very distinct in my specimens, but totally different from the rich orange-red or reddish-brown of the apical portion of the wings of subroseana.

- Ciliella, Hüb. Fore-wings long and narrow, and much pointed at the apex. Costa and hind margin nearly straight. Whitish-ochreous, fascia very oblique, parallel indeed with the hind margin, and barely reaching the costa; yellowish-brown or reddish, varying greatly in colour and distinctness. Beyond it, on the inner margin, and before the anal angle, is a triangular spot, and along the hind margin an indistinct band, both of the same colour as the fascia. Apical fringes very long, dull yellow. Hind-wings pale grey.
- Degreyana, McL. Fore-wings long and narrow, margins nearly straight. Greyish-white with a pink tinge, which becomes very decided towards the apex. Fascia reddish-brown, very slender, indistinct beyond the middle of the wing, and becoming obsolete before the costa. Apical fringes bright ochreons. Hindwings dark grey.

Thus subroseana and Heydeniana have broad wings and rounded margins, the former having an orange-red apex and spotted fringes, and the latter very short fringes with a dark line at their base.

Degreyana and ciliella have long narrow wings with straight margins, the former a slender abbreviated fascia and pink apex, and the latter a broad entire fascia and marginal band, both parallel with hind margin.

Finding last spring that the supposed subroseana which I have been in the habit of occasionally taking was likely to prove a novelty (Heydeniana), I resolved to work carefully for it, and, if possible, take a lot for my friends, this being apparently practicable, since it appears 246 [March

at intervals all the summer, and seems to have three broods. In this, however, I was partially disappointed, as pressure of business prevented my working more than the first brood to any purpose. The first specimen occurred on May 20th, and was followed by occasional specimens till May 30th, when I took two much worn, and after which they disappeared. Three days afterwards, however, in a damp portion of the same wood, I took a lovely specimen of the true subroscana, and in the next fortnight half-a-dozen more. This was most fortunate, as I had never taken it before, and, from meeting with the two species so nearly together, was able to compare them when fresh, and see how very distinct they really are.

As far as my experience goes, both are truly wood frequenting species. Although heath is most abundant around Haslemere, I never saw a specimen of *Heydeniana* among or near it, and cannot, therefore, confirm Mr. McLachlan's habitat for this species.

With reference to the localities given in the Manual for subroseana (and in Wilkinson's Tortrices they are similar), "Ambleside and near Airthrey, in healthy places," when we began carefully to examine these species, Mr. Stainton, with his invariable kindness, sent me one of his Scotch specimens. This I found to be totally distinct from subroseana, but of precisely the form of ciliella, but much yellower and more suffused. By the kindness of Dr. White, of Perth, and Mr. Chapman, of Glasgow, I have since received specimens taken near Kirkwall and at Dunoon, and these specimens form connecting links from this to the ordinary English type of ciliella, and prove conclusively, I think, that these localities pertain properly to that species.

Norwich, February, 1869.

Scydmanus fimetarius taken near Newcastle-on-Tyne.—I take here, by no means unfrequently, and always on boards lying on the edges of hot-beds, an insect which accords with the description, by Thomson, Skand. Col. iv, 89, of his Euconnus fimetarius, and which has been recently added to the British list by Mr. G. R. Crotch, but rather doubtingly admitted by Mr. Rye in this year's "Annual." It appears, however, to be a good species, and, in addition to the characters pointed out by Thomson, has the elytra proportionately narrower than its near ally, hirticollis, of which a Norfolk example has been kindly furnished me by Dr. Sharp.—Thos. Jno. Bold, Long Benton, Newcastle-on-Tyne, January 26th, 1869.

[Mr. Bold refers, I presume, to my remarks with regard to Thomson's apparent inconsistency in attributing so much specific value to the very moderate difference in habitat between S. hirticollis and S. fimetarius, whilst disregarding a more marked difference in habitat in the case of Bembidium æneum and biguttatum. In the

Norfolk specimen of hirticollis above-mentioned, kindly sent for examination by Mr. Bold, I noticed that the joints of the antennæ are comparatively longer and thinner than in finetarius; and Dr. Sharp, who subsequently sent me also a fen hirticollis, remarks the same character. He has also taken hirticollis at Weybridge, in moss on the banks of a large pool. All my former so-called "hirticollis" are finetarius. The majority came from Suffolk, but the insect occurs at Putney, in an open meadow, in vegetable matter, far from any hot-bed. I suspect that the true hirticollis will be found to be rare in our collections. Denny has the right species.—E. C. R.]

Notes upon Gemminger and Von Harold's " Catalogus Coleopterorum," Tom ii .-There are several points in and connected with this work which deserve the special attention of British Entomologists. Notably, it is worthy of remark that Baron Von Harold, who, during his visit to this country, accurately examined (amongst other things) the Stephensian Coprophaga, appears to have satisfied himself of the correctness of the view of the Kirbyan and Stephensian species taken by Mr. Waterhouse, in his "Catalogue." Accordingly, we find the British names, so well known to us, at last recognised to the fullest extent in the most comprehenive Continental Catalogue that has ever been published. From internal evidence, however, it is tolerably clear that, in some of the groups comprised in the volume now under notice, Mr. Waterhouse's Catalogue has been adopted without reference to corrections from time to time made in many of the species contained in that work subsequent to its publication; and certain supposed species, passed over in silence by Mr. Waterhouse, are again brought forward as good. This is, perhaps, somewhat to be regretted, in spite of the authors' evident intention to give a place to every species that is either recognized or has not clearly been accounted for; inasmuch as a little additional trouble (and very much trouble has clearly been taken) would probably have enabled the authors to have effectually disposed of these pseudo-novelties, and to have thereby made their useful work of still greater use.

The localities given for the different species are at first sight very puzzling, purely English authors appearing to have described continental species, and continental writers, who never mention English insects, having "Anglia" after their references. The authors' scheme seems to be to give after the name of a species and its synonyms the widest geographical points of the recorded localities for that species, in many cases irrespective of the primâ-facie deductions from the names of the authors quoted, except in the case of recognized varieties, when the country is noted from which each such instance is recorded by the author given. The method adopted by De Marseul, attributing to each species, synonym or variety, the country in which it is stated by the author quoted to occur, seems to me the more preferable of the two.

Some grammatical corrections, fearlessly introduced (e. g., Rhantus, Ilyobius,—for Rantus, Ilyobius,—&c.), will delight many and doubtless displease others; and the addition of their derivations to the generic names can hardly fail to correct certain prevalent abuses (e. g., Cercyon, a proper name, should not have neuter but masculine termination to its species;—a correction noted also recently in our columns by Mr. Dunning).

248 [March

The following specific points also occur to me among the Hydradephaga and Philhydrida:—

Our rejected Hydropori, minutissimus, and bisulcatus (syn. of our equally rejected unistriatus) are still credited to us. H. derelictus, Clark, is (as in Schaum) attributed to erythrocephalus, Linn.; but, from an examination of Dr. Power's original specimen, I must say I think this assertion of identity cannot be sustained. My suggestion (Ent. Ann., 1869) that Agabus nigro-wneus, Er., should be re-named Erichsoni, in consequence of the priority of the same Marshamian name, is here anticipated. Helophorus dorsalis, Marsh., is reinstated, but dorsalis, Muls., is erroneously attributed to it as a synonym. The latter has long been re-named Mulsanti by me, a correction adopted by Mr. Crotch. Ochthebius rufimarginatus, St., Er., is (erroneously, as I think) considered a var. of O. bicolon. Germ. O. hibernicus, Curtis, is exalted over the Stephensian punctatus;-De Marseul and Stein separating the two, and giving the former as a syn. of bifoveolatus, Waltl., a species not yet recorded as British, as far as I know. In Wat. Cat. they are given as identical, punctatus having the priority. Hydrena concolor, Waterhouse, Ent. Mag., I, 1833, 293, not appearing in the synonymy of Wat. Cat., is given as a distinct species. From an examination of Mr. Waterhouse's notes, I find that this insect is H. riparia, apparently immature, and accidentally omitted from his Cat.

Among the Brachelytra I find the following:-

Ischnoglossa corticalis, Steph., and Mycetoporus brunneus, Marsh., respectively recognised as identical with I. rufo-picea, Ktz., and M. ruficornis, Ktz., are nevertheless deposed in favour of the two latter names, in spite of the evident priority of the former. Aleochara Kirbyi, Steph., erroneously coupled with grisea, Ktz.,the algarum of Fauvel (really identical with and posterior in date to the former) being erroneously given as a distinct species. Oxypoda nigrofusca, Waterhouse, seems to me to require re-naming, on account of the prior insect of that name of Kirby and Stephens, which, however, appears to be a synonym of O. longuiscula. For the former species I accordingly propose the name " Waterhousei." Homalota planifrons and platycephala of Waterhouse are erroneously given as distinct species : Mr. Waterhouse withdrew the latter name, originally proposed by him for his insect, on account of platycephala, Thoms. The wind-bags, Homalota picea, Motschulsky, and Euplectus Easterbrookianus, Leach, are again inflated. Will no one puncture them? Gyrophana Poweri, Crotch, Stenus annulatus, Crotch, Lathrobium Jansoni, Crotch, and Homalium crassicorne, Matth., are omitted. Bryoporus Hardyi is inserted under the genus Mycetoporus, though Bryoporus is recognized as a distinct genus. Quedius microps, Grav., Stett. Ent. Zeit., 1847, is accredited to Britain.

Raphirus (Quedius) nigricornis, Holme, Trans. Ent. Soc. iii, pt. 2, 1842, p. 127, and Homalium mesomelas, Holme, l. c., 1841, 128, are respectively given as good species. Neither of them is accounted for in the synonymy of Wat. Cat., though Philonthus sericeus, Holme, is therein recognized. The Quedius is stated by Holme to be barely 2 lines long, and to be distinguished from all others of the genus, except fuscipes, by its black legs and antenne. Stephens' exponent of it appears to be a very small black form of Q. fulyidus. The Homalium is by Holme himself stated to be possibly a highly coloured variety of H. sordidum, Kirby, Steph.,—the type of which insect appears to be Philorhinum humile, Er., and which is represented by H. iopterum in Steph. Coll.

Staphylinus ochropterus, Germar (a synonym of chalceocephalus, Fab.) is attributed to England. Ocypus sericeus, Marsh., is recognized as a synonym of picipennis, Fab. Philonthus chalceus, Steph., following Wat. Cat., is made a syn. of carbonarius, Gyll.,—the carbonarius of Wat. Cat. being succioola, Thoms., here given as distinct. To add (how unnecessarily!) to the confusion re Philonthus punctiventris, Ktz., it would seem that that insect (if distinct from temporalis, Muls., as I am informed by M. Fauvel that in the opinion of himself and other continental authors, it is not) will require to be re-named, as there is a prior P. punctiventris of Kirby and Stephens, which is, however, only a variety of varians. In that case, rhaticus, Stierlin in litt., may stand. Othius punctivennis, Lac., is identified with and yet improperly placed before Stephens' leviusculus.

Stenus aceris, Steph., Lac., &c., is given as distinct, though long ago shown by Messrs. Waterhouse and Janson (Trans. Ent. Soc., iii, n. s., p. v, xvi, 1855) to be synonymous with impressus, Germ., and so recognized by Kraatz; and this in spite of Stephens' subrugosus and tenuicornis being correctly placed as synonyms of impressus in the work now being noticed. Stenus assimilis, Stephens, is given as distinct, though it is not recognizable or known to British Entomologists: in Steph. Coll. it is represented by his own brunnipes. Stenus debilis, Dietrich in litt., is attributed to me; and to it opacus, Waterh. in litt., is added as a synonym, evidently in error. S. pallitarsis, Kirby, Notes and Coll., Stephens Ill. and Coll., is rightly adopted instead of plantaris, Er. S. Shep(h)erdi, Crotch, is stated to be of ruralis, Er. S. sulcicollis, Steph., is given as a species, though, according to Waterh. and Jans., l. c., there is no description, but only a diagnosis of it in Kirby's MSS., which is copied with slight alterations by Stephens, whose description in Illust. probably refers to small gonymelas, and whose exponent in Coll. is melanopus. Bledius Ruddii, Steph., is given as a syn. of taurus, instead of bicornis, possibly through printer's error in Wat. Cat. Philorhinum subpubescens, Steph. (Ill. and Coll.), is apparently correctly adopted instead of humile, Er. Homalium ocellatum, Woll., and Allardi, Fairm., are considered identical; erroneously, as I think, -having examined Mr. Wollaston's type.

Among the Necrophaga, &c., I note the following :-

Bryaxis assimilis, Curtis, Brit. Ent., vii, t. 315, Schaum, Zool., 1847, p. 1933, and B. nigricornis, Vigors, Zool. Journ., ii, p. 453, are given as good species, and, of course, British. Bryaxis simplex, Waterh., will require to be re-named, on account of the prior species from the East Indies of that name, described by Motschulsky, Bull. Mosc., 1851. I accordingly propose the name "Waterhousei" for it. It is quite a mistake to suppose this insect can possibly be xanthoptera, Reichenb.; and I am surprised that the late Dr. Schaum should have overlooked its sexual character. Scydmanus fossiger, and others, Leconte, are not unlikely to mislead through their locality, "Cambridge" ("Ambiguam tellure novâ Salamina futuram").

S. Wetterhali, Gyll., through its syn., quadratus, Müll. et Kunze, is attributed to Britain. Neerophorus sepulchralis, Charpentier, by its syn., anglicus, Steph. (not in Wat. Cat.), is referred to this country,—possibly through an obrutor, another of its synonymies, being in Steph. Man Silpha Griesbachiana, Steph., and recta, Marsh., are attributed without doubt to carinata, Ill., which, therefore, is to be ranked as a British species,—apparently because Stephens has so referred his insect (not in

250 March,

Wat. Cat. syn.), though with a query. Choleva grandicollis, &c., of Murray. erroneously attributed as varieties to chrysomeloides; most likely through a misunderstanding of the remarks of that author, who says there are forms of chrysomeloides corresponding with the type as he (erroneously) considers grandicollis, &c., to correspond with tristis. C. Kirbyi (rotundicollis) is again sunk as a var. of tristis. C. frater, Newman, Ent. Mag., 1, 1853, 507 (not in Wat. Cat.), is given as a good species. This, and C. soror and nubifer of Newman, l. c., are only incidentally mentioned in Murray's introductory remarks, wherein he states that he has not seen types of them, but that Mr. Little had specimens of soror and nubifer, named by Stephens, which were respectively to be referred to C. nigricans and C. velox. Apparently in accordance with this inconclusive identification, C. soror and nubifer are here placed as synonyms of the latter two species. C. frater, from the hopeless description, would seem possibly to be either small nigricans or coracinus. It is likened by its describer to C. fornicatus,—a name which I cannot find in Murray or Wat. Cat., but which, I presume, signifies C. nigricans, Spence. All three of Mr. Newman's species are stated to have been taken at Halifax, and to be in the Cabinet of Mr. Davis.

Anisotoma vittata, Curtis, Ann. Nat. Hist., v, 1840, 276, not being in syn. of Wat. Cat., is given as a good British species. I presume it is A. litura, Steph. Colenis latifrons, Curtis, I. c., also given as a good species, is C. dentipes, teste Wat. Cat. Liodes axillaris, Steph., is stated to be a variety of L. castaneus (an insect not known to occur in Britain until late years), but is & humeralis. Agathidium convexum, Sharp, is placed as a synonym of globosum, Muls. et Rey. Clambus coccinelloides and nitidus, Steph., Ill. Brit. Ent., ii and v, not in syn. of Wat. Cat., are given as good species; and Ptilium minutum, Steph., l. c. iii, 61, is in the same rank.

Finding so many note-worthy subjects in this volume, I propose to look through the first vol. in like manner, and will publish the results of my examination.—E. C. Rye, 7, Park Field, Putney, S.W.

Note on Saprinus (Gnathoncus) punctulatus, Thoms.—Among some insects sent to me for examination by Mr. Jos. Chappell of Manchester, I find a specimen of a Saprinus (taken at Lytham) which has raised in my mind a certain amount of doubt as to there being sufficient specific distinction between S. punctulatus (already recorded as British, from the London district, Ent. Ann., 1867), and rotundatus. Thomson's chief characters for his punctulatus, as compared with the latter, appear to be its smaller size (1 lin. as against 13 lin.) and lighter antennæ, legs, and hinder parts of the elytra, which are more sparingly punctured, and have no sutural stria. Now Mr. Chappell's insect is quite 11 lin. long (my Londondistrict specimens averaging 1 line only), has the antennæ, legs, and hinder part of elytra darker, and the punctuation of the elytra closer (being quite confluent behind) than in my above-mentioned smaller examples, -so far agreeing with the differential characters for rotundatus. But its sutural stria is so very short that it may be considered as absent, for it requires a "Coddington" to show that it is represented by the confluence of three basal punctures only. Now, in the much smaller London examples above alluded to (all of which have lighter legs and apex to elytra, and less closely punctured elytra), the sutural stria varies considerably,

251

being in some as obsolete as in the above-mentioned larger insect, and in others (though always abbreviated) very well marked and distinct. It seems to me, therefore, that Gyllenhal was probably right in ascribing the insect characterized by him as "longe minor, elytrorum apice pedibusque piceis" as a variety of rotundatus. He evidently knew both forms; and, referring to the striæ in his diagnosis including both, says "suturali nulla." Thomson is, curiously enough, quite silent as to Gyllenhal's note on the smaller form. Yet for rotundatus he quotes him (converting the "suturali nulla" into "suturali abbreviata"), and also quotes Erichson, who by the sizes given  $(1-1\frac{1}{2} \text{ lin.})$  clearly includes both forms, and who says in his diagnosis "stria suturali obsoleta," and in his description "der Nathstreif fehlt gewönlich ganz, höchstens ist hinter der Mitte eine geringe Spur vorhanden." After seeing Mr. Chappell's insect, I am inclined to think Gyllenhal and Erichson more likely to be right in ascribing considerable variations to rotundatus than Thomson (more suo) in splitting it into two species.—ID.

Note on Neuronia clathrata in England.—I have two specimens of this caddisfly, captured many miles from Mr. Chappell's locality, but still in Staffordshire. I thought at the time that they pertained to the above species; and the illustration in the last "Annual" places the matter beyond a doubt. They were taken on a "moss" where there is scarcely a rill of running water and no pool, but it is nevertheless very wet.—E. Brown, Burton-on-Trent, 7th February, 1869

Note on British examples of Chrysopa tenella, Schneider.—On re-arrranging my collection of Neuroptera-Planipennia according to Mr. McLachlan's lately published "Monograph" of the British species of that group, I found that four specimens of Chrysopa which I had labelled as tenella, Schneider, did not appear to be referable to any of the species described by him. I therefore submitted them to him for his opinion, and he pronounces them to be truly that species. Three of the examples have been in my possession under that name since 1862, having been captured by myself, in the neighbourhood of Hampstead, in June and July of that year; and a record of their capture will be found in the "Zoologist," at p. 8311 (1862).—Percy C. Wormald, 35, Bolton Road, St. John's Wood, 1st February, 1869.

[I had overlooked Mr. Wormald's record of this species. A short description of the species is to be found in Dr. Hagen's Synopsis in the "Annual" for 1858, p. 22; where it is noticed as British on the authority of "a doubtful specimen in the collection of the British Museum," which I have been unable to find. It is the smallest native species.—R. McLachlan.]

Capture in England of the true Hypermecia augustana of Hübner; and correction of synonymy.—In August, 1866, I took one specimen of a Tortria, which in July of the following year I sent to Mr. Doubleday, for his opinion upon it. He kindly informed me in a letter dated July 4th that "he believed it was the true H. augustana of Hübner, of which he did not possess a specimen; he had, however, carefully compared it with Herrich Schäffer's figure, with which it agreed very well." In a second letter, dated July 9th, he adds, "The species which has been

called augustana in this country is the executana of Herrich Schäffer, and probably the cruciana of Linnæus." The discovery of the true H. augustana in this country therefore adds another species to our lists, where the two should now stand as in Dr. Staudinger's Catalogue.

"No. 1037. Cruciana, Linn. Excecana, H. S. Viminana, Gu. No. 1038. Augustana, H. S. 205. H. S. 262."

In the hope of re-visiting the spot where I took my specimen and finding more, I have, up to the present, omitted to mention the circumstance, but was reminded of it by receiving a copy of Dr. Herrich Schäffer's work this morning from Mr. Van Voorst, which enabled me to compare the specimen with his figure 262, pl. 51.

I took the insect at High Force, near Middleton Teesdale, in the county of Durham, in August, 1866. It seems very distinct from the species which has been hitherto accepted as *H. augustana*.—Thomas de Grev, Merton Hall, Thetford, 3rd February, 1869.

Another Xylina Zinckenii.—The following must be amongst the earliest captures of this rarity. A brother collector, a neighbour, lately brought me, as a present, what he and his friends at the time (October, 1865) considered a strange example of Acronycta psi. At this date it may be borne in mind that Dr. Knaggs had not identified anything British born with X. Zinckenii.

It appears that my friend was out pupe digging in the northern environs of London, when, rising from the root of a poplar, he was surprised to observe this fine example of what struck him as one of a second brood of A. psi at rest upon the bark. He had neither pill nor collecting box—merely a small cradle for his "diggings." However, he fortunately found a pin between the walls of his waist-coat, and a cylinder hat, in which the illustrious stranger was duly installed. Until kindly taken out for me, it had ever since remained in his duplicate box.—EDWARD HOPLEY, 14, South Bank, Regent's Park, February 16th, 1869.

Yama-mai culture. - I have received the following notes on Yami-mai culture :-

"I had 22 eggs, and 15 larvæ hatched out from May 16th to June 2nd. I fed them on the common cak, in a wooden box  $18 \times 14 \times 8$  inches, the front was wire-cloth, and the branches were inserted through holes in the bottom of the box into a basin of water. Fresh food was supplied at first every 1st or 2nd day, but afterwards every 3rd or 4th day. There was no thermometer in the room, nor fire, nor artificial heat; a quantity of cotton and woollen cloths and yarns were kept in the same room. It has been a very warm season, and the temperature would range high; the attic in which they were kept faced south, and measured  $21 \times 18 \times 8$  ft., the windows were open by day, the door generally open, there was but little draught, and the room was not exposed to the sun's rays. I have four coccons, spun July 16th, 17th, and 20th. The worms seemed healthy when hatched; two died before moulting; the rest all attained a good age. The disease shewed itself by changing the worm to a greenish-white, and the dark spots shewed themselves and spread up the worm till they became soft and black all over. I have no proof that the disease was infectious; I tried every means to

avoid infection by separating and cleaning. One day, when the number of the worms was reduced to five, I found one diseased in close embrace with a healthy one; I separated them at once, and the healthy one remained so, and spun July 16th, and emerged subsequently."—(from Thos. Scott, Hamilton, Scotland.)

"I had 12 eggs; 8 worms hatched out early in May; the eggs were kept in the quill in which they were sent, and kept in an envelope in a north room. About May 2nd the first larva hatched, and died, not being seen in time. The worms were fed on common oak, indoors; the leaves were given three times a week, in a shallow box kept in the shade in an upper sitting-room, having a south-east aspect, 16 feet square; doors and windows frequently open, as the weather was very warm. During an absence from home 3 worms died, and 2 escaped. I am afraid they were exposed to a hot sun. On my return 2 only were left; they throve well, till one, after moulting, drank some water which was accidentally spilt: its head swelled up and became of a dirty brown colour, and it wasted away. The last worm I put on a branch of an oak inserted in a pot; it soon began to spin, and emerged, a fine \$\mathcal{J}\$, August 30th."—(from WM. COTTON, Carogh Glebe House, Ireland.)

Dr. A. Wallace, Colchester: February, 1869.

Scoria dealbota; correction of an error.—In my communication respecting the habits of this species (p. 223), a mistake has occurred. Instead of "but fly reluctantly in the sunshine," should have been printed "but fly naturally in the sunshine." I particularly notice this as I had understood that the insect was generally disturbed from the long grass when walking amongst it; and this I found was the case on dull days: but when I saw most of them it was in the forenoon, hot, and the sun shining brightly. They were then to be seen starting up on various parts of the hill-side, where there was nothing to disturb them; so that it is most certainly a true day-flying insect.—W. R. Jeffreex, Saffron Walden, February 3rd, 1869.

Early appearance of Tephrosia crepuscularia.—This species made its appearance in the wild state on February 5th, this year; but in ordinary seasons it does not occur before March; the earliest specimen I have hitherto noted having been on February 15th, 1864.

Last year I reared from the egg a good series of the dark smoky variety of this species, and should any of your readers wish for any, I shall be happy to give them away.—John T. D. LLEWELYN, Ynisygerwn, Neath, February 8th, 1869.

Late appearance of Hybernia defoliaria.—In contrast with the precocity of P. pilosaria (see p. 224), H. defoliaria 3 was found on the 10th inst., apparently fresh from the puparium.—W. Herd, Perth, January 18th, 1869.

Notes respecting the abundance of Colias Hyale in 1868.—Having just read Mr. C. G. Barrett's interesting observations on the occurrence of C. Hyale in Britain, in the December number of the Entomologist's Monthly Magazine, I thought the following would be of use, as it occurred to me at a much later date than any mentioned by Mr. Barrett.

254 [March

On the 24th of September, 1868, I was collecting in a lucerne field five miles from Canterbury and three from Faversham, and while kneeling down to pin a specimen of C. Edusa, I saw C. Hyale hanging downwards from a stalk of lucerne and drying its wings. On being disturbed it flew about a yard and settled again, upon which I took it, and found its wings to be so soft and limp that I should not have thought it would have been able to fly at all. Soon after this I took two more C. Hyale, flying heavily, and found, in both cases, that their wings were soft and limp, they having evidently come out the same morning. I may further add, that the entire week before the 24th had been dull and gloomy, and though having visited that field nearly every day, I had not seen a single specimen of C. Edusa or C. Hyale. I have since found that two days afterwards a friend of mine visited the same spot, and took several C. Hyale, but all rather worn and dull. Those I took on the 24th were the most perfect specimens I have seen, the pink fringes to the wings being especially perfect.—V. B. Lewes, 76, High Street, Hampstead, Dec., 1868.

Note on Sphina convolvuli.—In the December number of this Magazine the Rev. J. Hellins has favoured us with some "Observations on the occurrence of Sphina convolvuli in Great Britain." Here, as in Devonshire, a large number of this fine insect occurred last year in August and September. His very full and interesting facts leave me nothing to record so far as last season is concerned, for his dates of its appearing and disappearing very nearly agree with my own; and here also "the good and battered specimens occurred together throughout the whole period;" but it may interest Mr. Hellins and others to learn that in the year 1861 a fine and nearly perfect S. convolvuli was found, on the morning of October 19th, in a torpid state, near some flower-beds, upon a lawn in this neighbourhood. The insect was sent to me, and, when it had been for some time in a warm room, revived and flapped its wings. This is a later date than the insect appears to have been seen by either Mr. Hellins or Mr. D'Orville.—E. S. HUTCHINSON, Grantsfield, Leominster, February, 1869.

Note on effects of mild winter.—Is it not unusual for the larvæ of Pieris rapæ to occur in the winter? One was taken in my garden on the 29th of last December, and became a healthy but very small pupa on January 3rd. Doubtless the more than common mildness of the season accounts for its late appearance, as well as for the fact that an image of Eup. albipunctata emerged on January 14th, and a fine \$\frac{Q}{2}\$ A. prodromaria on the 29th, quite without forcing.—In.

Early appearance of Saturnia carpini.—Perhaps it may be worthy of notice that on the 5th of the present month I bred Saturnia carpini. It had been kept in a room facing north, which had not had any fire in the whole winter; whilst, as a rule, the window was open.—Frank Phillips, Forest Hill, 13th February, 1869.

Acanthosoma; the beginning of the end.—From the concluding paragraph of Mr. Marshall's paper, referring to "other matters" mentioned by me, and the editorial note, referring to "other points" (ante, p. 209), I was under the impressional referring to "other points" (ante, p. 209), I was under the impressions.

1869.1

255

sion that the "Reply on the Gender of Acanthosoma," as published in the January number of the Magazine, was complete; had I known that there was more to follow on the same matter and the same point, I would have waited for the "Further Reply;" and I trust that Mr. Marshall will pardon the seeming discourtesy of my having interrupted before he had finished.

- It is quite true that Mr. Marshall's original objection included words like
  Phanerotoma, Pentatoma, and Tapinoma; it is equally true that such words were
  excluded from my attempt to maintain the neutrality of Acanthosoma (vide ante, p.
  183). I agree that Phanerotoma, Pentatoma, and such words, are feminine; but I
  hold them to be, as names of genera of insects, feminine substantives.
- 2. No doubt Mr. Marshall will object to the assertion (ante, p 230) that "the subject is not contained in the word Harma, but understood." He will now say that Harma does contain the subject, not literally, but figuratively or metaphorically. But if figure and metaphor are admissible, why are we to stop short at a chariot? It is allowable to call one bug Harma, "chariot," or even Chalcarma,\* "brazenchariot," but it is "far-fetched and inappropriate" to call another bug Trigonaspis, "triangular-shield!" Many will be apt to think this a distinction without a difference. The difference upon which Mr. Marshall relies is this—in the one case the whole animal is shaped like a chariot, in the other a part only of the animal is shaped like a three-cornered shield. If the whole insect had been shield-shaped, Trigonaspis would have been a substantive, "containing the subject by a metaphor," but as part only of the insect is shaped like a shield—metaphor, away!—Trigonaspis is an adjective, expressing only an attribute of the creature, it does not denote "the whole of the subject."

But if recourse may be had to a figure of rhetoric to explain Harma, why not also to explain Trigonaspis? Metaphor is the figure by which one thing is put for another; synecdoche is the figure by which part is put for the whole—as caput for homo, tectum for domus. If metaphor be admissible, why is synecdoche to be excluded?

After all, what for the present purpose is the difference between a name which "contains the subject by a metaphor," and a name which "expresses only some attribute of the subject?" Harma is said to contain the subject by a metaphor; in fact it only denotes the possession by the subject of a particular attribute. "Harma, chariot, is an apt similitude for the form of the insect." Being of the form of a chariot is an attribute of the insect, and it is that attribute, and that alone, to which the name refers.

Again, the Greek soma signifies the body as a whole, the whole body. Acanthosoma therefore expresses the whole of the subject or creature designated; and doing so (vide ante, p. 230), it "ceases to be an adjective."

<sup>\*</sup> Mr. Marshall says "Chalcharma (better than Chalcarma)." I am not aware that the noun substantive anywhere occurs in Greek; but the sijective is used by Pindar as an epithet of the god of war. Pindar makes it Chalcarmatos Ares, not Chalcarmacos. I can therefore continue to write Chalcarma without much seit-reproach, and throw the blame upon the blundering ancients, who ought to have known botter." Mr. Marshall does not like Chalcarma; perhaps some one will say that even Chalcharma is capable of improvement; what if Chalcoharma were suggested?—J. W. D.

<sup>†</sup> It is a still more apt similitude for the form of the butterfly; the outline of the wings, when elevated in repose and close together—the side view of the butterfly—is exactly that of a chariot,—J. W.D.

"The principles upon which the interpretation of such words depends belongs to logic, and not to grammar." I agree. The question of what a name is gram. matically, is distinct both from the interpretation of the word, and from the reason why the name is given. And it seems to me that the name of a group of animals may well be a noun substantive, even though it express only some attribute of the subject, or even though it were selected by reason of some peculiarity of a part only of the subject. Ctenidium, as the name of a beetle, is a "substantive taken figuratively," the genus being named "little comb" either jocularly, because it comes near Trichopteryx, "hair-wing," or because the fringed apex of the wings (not the whole beetle) resembles a comb; it would be none the less a "substantive taken figuratively" if applied to a moth with pectinate antennæ. If I may be allowed to say so, Mr. Marshall's argument confounds two different things-the name, and the reason for the name. I name a moth Uropteryx because it has caudate wings; but it does not follow that Uropterys means "having caudated\* wings," or is an adjective. I am at liberty to take the substantive Uropterya, "tail-wing," as the name of a moth which has tailed wings, just as I may take the substantive Harma as the name of a bug which has the shape of a chariot.

Mr. Marshall's division (A. b.), p. 235, includes "proper names" among the "substantives taken figuratively." Whatever its derivation or meaning, the name of a genus is a "proper name," and therefore a noun substantive.

3. Mr. Marshall submits that the Micrornix+ passage (ante p. 184) is a "mixture of two syllogisms" which are exhibited separately at p. 236. The syllogisms involved in my argument are distinct enough, as follows:-

Micrornix (Bird) is a substantive.

Every substantive has a gender of its own.

Therefore Micrornix (Bird) has a gender of its own.

Every substantive contains its own subject.

Micrornia (Moth) does not contain its own subject.

Therefore Micrornia (Moth) is not a substantive.

The second syllogism at p. 236 is in fact the reverse of that contained in my argument. It may be that, on the metaphorical theory, which when I wrote had not been developed, the "passage involves a fallacy," owing to the double sense in which, on this theory, Orniv is used. I need scarcely say that the passage, like the demonstration at p. 230, was intended as a reductio ad absurdum of the contention -taken literally, as I then understood it, not metaphorically, as it is now explained -that the name of a bird or bug, if it be a substantive, must contain the subject bird or bug, as the case may be.

But now it is conceded that the subject may be expressed by a metaphor, and I begin to think the day may come when Mr. Marshall will admit Acanthosoma as a substantive. The metaphorical "chariot" will open the way for the figurative "shield," and leave a passage for the graphic "spine-body" and the poetic "red breast." It is not disputed that a compound noun substantive may be taken a the name of a genus, or that acanthosoma is the correct form of the Greek noun

<sup>\*</sup> Query, caudate .- J. W. D.

<sup>4</sup> Mr. Marshall says "the form Microrais would be preferable." I thought the reference to the Lephdoperous genus Orais was sufficient to show why I took the form Microrais. If "Orais is on a disactic variation and comparatively unusual." I would not change the established name Orais into Orais, though I night prefer the latter, if the same were now for the first time being published.—J.W. I

substantive corresponding to "spine-body," or that acanthosoma, as a Greek noun substantive, would be neuter. In truth, i is as good a Greek substantive as neoplasma, and of the same gender. The fact that the nomina trivialia are in the genus Acanthosoma made neuter, shews that the author had in his contemplation the neuter substantive acanthosoma, and not the feminine gender of any such adjective as acanthosomus. And if a compound noun substantive, correctly formed, may be applied, and has been applied, are we justified in rejecting the author's own indication of the origin and meaning of his name, simply because we, in framing a name to express the same idea, might have arrived at it by a different process which would have given it a different gender?

- 4. Mr. Marshall intimates that he would himself have made both Acanthothorax and Uropteryx masculine, on the principle of the masculine gender being more worthy than the feminine. This strikes me as a new application of that "precept." But what I am most interested to know—particularly with reference to the projected Catalogue—is, whether it is proposed that Uropteryx sambucaria shall be changed into U. sambucarius, and so on with the rest?
- 5. Harma may be a more reasonable name for the bug than Arma; but that is not the question. Agassiz gives a derivation for Arma (I do not say a satisfactory one) different from any of those mentioned by Mr. Marshall. If Hahn had written either Arma luridum or Harma lurida, there would have been stronger ground for supposing that the generic name was derived from the Greek word for a chariot; but the supposition seems to me to be rebutted by (1) the absence of the initial aspirate, and (2) the deliberate adoption of the feminine gender. The case is not like Hyponomeuta, where Stephens himself gives the derivation, and if he had not, no other is possible. That the feminine gender was advisedly used by Hahn is shown by the change of the Fabrician Cimex luridus into Arma lurida, which Mr. Marshall now wishes to change into Harma luridum.
- 6. As to the rejection of barbarian and badly constructed names, I am afraid it would be impossible either to obtain the concurrence of the "great head-centres of Entomology," or with such concurrence to procure such rejection.
- Mr. Marshall's opening sentence (iv, 259), "the publication of a Catalogue of British Insects under the auspices of a scientific Society offers an opportunity for getting rid of a number of flagrant instances of cacography in names, which it is to be hoped will not be neglected"—and the passage (iv, 280) respecting the "adoption" of certain "corrections to the nomenclature of British Heteroptera," and of the case with which "a similar reformation" might be effected in other Orders—led me to suppose that the rejection of all the specified "instances of cacography" was proposed; and it was particularly with reference to the preparation and publication of the said Catalogue that my enquiries were made as to the extent to which it was wished to carry the expurgation of our Lists. If the object was to "check the formation of such words" for the future, I have only to express my heartiest wish that this object may be effected, and to repeat what I said before (p. 186)—" Viewed as canons for future guidance, I agree in the main with Mr. Marshall's propositions."
  - 7. I referred to hippopotamus, not as being a correct compound, or as "sub-

versive of the rule for compound terms," but for the purpose of showing the necessity for caution in the retrospective application of the rule to current names. If Charopotamus is to be changed, Hippopotamus ought to go also; if Charopotamus is not to be inverted, why should Corimelana or Derephysia?

There is a manifest distinction between the hippos potamios of Herodotus and the hippopotamus of Strabo; the former was a compendious description of a newly discovered animal, fluvial in its habits, and supposed to be a horse; the latter is the name given to the animal when it was found not to be congeneric with the horse, and to require a name of its own.

- 8. My question as to rhinoceros was asked only in view of the abandonment of hippopotamus being insisted on. Both rhinoceros and ceratorhinus are correct, but I think they are not quite "equivalent terms." The name Rhinoceros, "nose-horn," was doubtless given to the animal from its "having a nasal horn;" but Rhinoceros, the name of the animal, is a substantive. So Monoceros, "having a single horn," is a substantive, when used as the Greek name of the better-known Latin unicorn. In diceros Selene, the two-horned moon, diceros is no doubt an adjective; but as the name of a genus of Cetoniida, Diceros\* is a substantive. Mr. Marshall allows that "such words, like our names of genera, become substantives conventionally"—it is by the same convention which makes Hippopotamus a substantive, or Hippos a substantive, which makes a substantive of the name by which we denote any other existing thing.
- 9. I am glad that attention has been again called to formicaformis, tipulaformis, &c. As bearing on this, and the intervening letter o in compounds from the Greek, I may mention that when, in the "Accentuated List" before alluded to, Ourapterya was changed into Uropterya, and formicaformis into formiciformis, a reverend critic indignantly enquired (I forget in which of the then existing serials) upon what principle such innovations had been made!—J. W. Dunning, 24, Old Buildings, Lincoln's Inn, 13th February, 1869.

[This paper must form not only "the beginning of the end," but the end itself, of this most interesting controversy. May the spirit in which it has been conducted by both gentlemen be emulated by all who enter the arena of argument on scientific questions!—Eds.]

Entomological Society of London; January 25th, 1869. (Anniversary Meeting.)—F. Smith, Esq., in the Chair.

The Hon. T. De Grey, M.P., and Messrs. Pascoe, A. R. Wallace, and Wormald were elected into the Council in the room of outgoing Members. The President and other officers were elected as before. The Secretary read the report of the Council, and also an address by the President (who was unavoidably absent) on the progress of Entomology during the past year; and the Meeting terminated with the usual votes of thanks to the Council and Officers.

February 1st, 1869.—H. W. Bates, Esq., F.Z.S., President, in the Chair. The President nominated Messrs. Pascoe, Smith, and A. R. Wallace as his Vice-Presidents for the ensuing year.

<sup>\*</sup> Unfortunately Gory and Percheron mis-spelt it Dicheros .-- J. W. D.

Mr. E. Saunders exhibited a good example of Pachetra leucophaa, taken by Mr. N. E. Brown from off a gas-lamp at the Red-Hill Station, on 14th May, 1868.

Mr. Horne (present as a visitor) narrated an account of the antagonism existing between rats and scorpions in India. He had confined the animals under a glass case, in order to observe their movements, and found that the rat invariably disabled the scorpions by seizing them by the tail, after which it proceeded to pull off the legs; but did not eat the creatures.

Mr. Pascoe made some observations on the genera Aprostoma, Mecedanum and Gempylodes regarding the possible identity of the genera. He exhibited a species of Hemiptera (perhaps an Odontoscelis) from Toulon, which he could not find described in any work.

The Secretary read a letter addressed to him by Dr. Butterfield, P. O. Box No. 1473, Indianopolis, Indiana, wherein the writer expressed his desire to give a tolerably complete collection of the *Lepidoptera* of his State, in exchange for a similar one of British species.

Mr. Butler communicated a description of a new species of Hestina from India, which he proposed to call H. Zella. It bears a strong mimetic resemblance to Danais Juventa.

Professor Westwood exhibited drawings of a minute insect belonging to the family Aphida, which was causing great damage of the vineyards of the south of France, and also occurs in England. He had first became acquainted with the creature in 1863, when he received some vine-leaves attacked by it. A puncture being made in the upper cuticle, the wounded part thickens, bulging out beneath, and forming a concavity above, round the edges of which small imbricated scale-like growths are produced, closing over the cavity; in this nidus the insect produces its young. In the spring of last year he read a paper on the subject before the Ashmolean Society, and applied the name of Peritymbia vitisana. But it is under other circumstances that the greatest damage is done. The same species (for he could detect no difference whatever) is subterranean also, then sucking the extremities of the young root-fibres, thus threatening the life of the plants. Under this condition the French had termed it Rhizaphis vastatrix. Dr. Signoret considered it to be a species of Phylloxera.

Mr. Smith mentioned that he had observed a parallel instance of great diversity of habit in Cynips aptera, which ordinarily makes more or less agglomerated masses of galls on the roots of the oak. But he had once found small galls formed of imbricated scales on the surface of the principal stem under-ground, and from them had bred an insect which he could in no way separate from the ordinary C. optera.

BRITISH HEMIPTERA: ADDITIONS AND CORRECTIONS.

BY J. W. DOUGLAS AND JOHN SCOTT.

Section 6,-TINGIDINA.

Family 2.—Tingididæ. Genus 1.—Monanthia.

Species 9.-Monanthia similis, n. sp.

Ochreous-grey, with small black marks on the reticulation and

260 (March,

keels; side margins of the *pronotum* and anterior margin of the *elytra* wide, with four rows of meshes, the circumference of the former broadly rounded anteriorly.

In structure, marking, colour, and size, this species is very like *M. ampliata*, from which it differs in the following respects. The antennæ are perceptibly thicker, and much shorter, the spines on the head longer and sharper, the side margins of the *pronotum* more rounded at the front, the curve being continued regularly to the hood (in *ampliata* the margin *projects* anteriorly in an obtuse angle, and then goes in an oblique straight line to the hood).

Two specimens taken by Mr. Wollaston, but the place and date of capture are not recorded.

Section 9.-CAPSINA.

FAMILY 3.-MIRIDÆ.

Genus 2A .- TERATOCORIS, Fieb.

Species 2.—Teratocoris Saundersi, n. sp.

Bright green, shining, sparingly clothed with short, sub-erect, yellow hairs.

3. Head—With a black central line extending throughout its entire length, widest at the posterior margin; round the insertion of the antenne narrowly black. Antenne, 1st joint green, clothed with short dark hairs; base with a narrow black ring, apex more or less pitchy-red; 2nd brownish-pink, apex brown; 3rd and 4th pitchy-black. Eyes reddish-black. Rostrum greenish-yellow, apex black.

Thorax-Pronotum green, with a black central line extending throughout its entire length; at the anterior angles a short, somewhat oblique black streak reaching to the callosities, the latter with a slight fovea near the centre; collar and posterior portion of the disc finely shagreened. Scutellum green, with a more or less distinct short black streak between the base and the transverse channel; at the basal angles a deep fovea. Elytra green, as long as the abdomen, finely shagreened. Clavus, inner margin very narrowly black. Membrane with only one cell, pale fuscous with a purple iridescence. Cell green, almost entirely subcoriaceous and finely shagreened; cell nerve green. Sternum green. Prosternum, on the sides towards the front, with a short, cuneate, black patch. Legs green, clothed with short, sub-depressed, dark hairs, Thighs, at the apex, more or less inclined to reddish; 1st and 2nd pairs, on the underside, with a row of erect hairs. Tibiæ greenish or greenish-yellow, thickly clothed with short, sub-depressed, brownish-yellow hairs; 2nd and 3rd pairs frequently inclined to brownish-pink or yellow at the apex. Tarsi brownish-yellow, apex of 3rd joint black. Claws brown.

- Q. Developed form. Head and pronotum as in the 3, the central line of the head not so distinct. Scutellum without a central line; apical portion transversely wrinkled. Elytra longer than the abdomen. Membrane with two cells, the lesser one very narrow, and almost forming an isosceles triangle. All the other characters as in the 3.
- Q. Undeveloped form. Head, pronotum, and scutellum without the black central line; posterior margin of the callosities blackish. Elytra shorter than the abdomen. Cuneus not distinct from the corium. All the other characters as in the developed form. Length 3 2-2½; ? 2½—3 lines.

Most nearly allied to *T. antennatus*, Boh. (Fieb. Europ. Hem. 246, 1), but the absence of the streak along the margin of the abdomen, and the blood-red hinder tibiæ, will at once enable any one to separate them.

We have much pleasure in naming the species after Mr. Edward Saunders, its captor, who took a few examples at Deal, by sweeping among rushes, &c., at the end of June and beginning of July. He has also an undeveloped  $\mathfrak{P}$ , taken near Aberdeen.

#### Genus 3.-Lopomorphus.

We now believe that the insect described in the "British Hemiptera," page 224, 1, as *Lopomorphus carinatus*, is only a small and curious variety of *L. ferrugatus*, to which the description must also apply.

# Family 4.—Phytocoridæ. Genus 2.—Phytocoris, Fall.

Species 2A .- Phytocoris marmoratus, n. sp.

Pale green, with large irregular black patches, sometimes almost covering the entire elytra; at others, having somewhat of a banded appearance; clothed with depressed white hairs, slightly curled, and "sposed in a confused manner, and interspersed with sub-erect black ones.

Head—pale yellowish or greenish-white at the posterior margin, and adjoining each eye a small piecous or blackish spot. Antennæ black, as long as the body; 1st joint a little more than half the length of the second, with one or two small, somewhat round white spots towards the base, and two or three oblong ones towards the apex on the upper side, and a few long, erect, black hairs; apex slightly piecous, 2nd with a narrow white ring at the base, and another, whitish or brownish-white, of about the same size beyond the middle; 3rd about two-thirds the length of the second, base narrowly white; 4th shorter than the 1st; below the eyes and beyond the side-lobes of the face a black streak. Rostrum pale-yellowish or greenish-white, apex piecous.

262 [March,

Thorax-Pronotum black, collar pale green except at the sides; posterior margin white, in the centre forming a triangular patch, and on either side, next the posterior angle, a lunate one; disc with an oblique green streak on each side of the centre, terminating in a round spot on the callosities; sometimes the entire centre is pale green, of a trapeziform shape, or having, in addition thereto, a black x-shaped patch between the callosities. Scutellum green, base as far as the transverse channel piceous or black, except a narrow streak within the basal angles; on each side, before the apex, a short, oblique black streak, becoming fuscous as it approaches the centre, from which it is separated by a pale narrow line; apex white. Elytra green. Clavus with a large irregular black patch next the suture, interrupted by about three short, oblique green streaks, sometimes dividing it into separate patches, or, almost entirely black with the exception of the three short streaks and a narrow line extending from the scutellar angle to the apex, which last is always black. Corium, anterior margin with four or five black spots of irregular size, sometimes fewer, apex broadly black; disc with an irregular broadish black band generally opposite to the apex of the scutellum, and more or less marbled with small green spots of irregular shape; below the band and next the claval suture a few more or less confluent black spots, the obtuse rhomboidal patch at the apex margined with black on its inner margin and along the membrane suture as far as the inner basal angle of the cuneus, where it terminates in a black spot, sometimes detached, between this and the apex of the anterior margin generally rosy. Cuneus broadly and irregularly black at the apex, in which are some minute green spots; extreme apex pale. Membrane pale, inner basal angle blackish; the entire lower half of the disc with irregular confluent blackish spots and patches, darker towards and at the apex of the anterior margin; below the apex of the cuneus a small triangular blackish patch. Cell nerves pale green; large cell nerve for about two-thirds its length blackish; lesser cell nerve black; base and apex of the large cell more or less and the lesser cell entirely blackish. Sternum-Prosternum on the sides broadly black, xyphus green. Mesosternum black or deep pitchy-black. Metasternum on the sides black. Legs greenish-white or yellow. Coxæ at the base on the outside with a piceous spot. Thighs clothed with fine, short, depressed pale hairs, intermixed with long, erect brown ones; apex narrowly pale; 1st pair marbled with black for more than one-third of their length, generally leaving a narrow black ring before the apex, the colour carried along the upper- and under-side, in a more or less interrupted line, nearly to the base; 2nd with a narrow black ring before the apex, the marbling not encircling the limb generally, but interrupted on the inner and outer sides by the longitudinal furrow, the colour carried in a more or less interrupted line along the underside nearly to the base; 3rd with a broad, oblique pale ring, and between it and the apex, next the under-side a round pale spot, the marbling carried along the upper- and under-sides somewhat broadly for about three-quarters of their length. Tibia, all the pairs with three black rings, and clothed with long, erect, brown hairs; 1st pair, at the base on the inside with a small black spot, a ring a little distance from the base, a second in the middle, and a third

at the apex, the latter piceous; 2nd, the knee on the under-side blackish or piceous, a ring a little way from the base, a second in the middle, and a third about its own width from the apex; 3rd, the rings placed as in the 2nd pair, the 1st ring generally continued to the base as a line on the under-side; upper-side with one or two pale spots. Tarsi piceous, 2nd joint yellowish. Claws brown.

Abdomen-Underneath black, with a broad green central streak.

♀ paler than the ♂.

Length 2½-3 lines.

This insect is very nearly allied to *P. tiliæ* and *dubius*, but it is most likely to be mistaken for the former. Its general darker appearance may serve to distinguish it from that insect and from *P. dubius* by its unicolorous head and black base of the 1st joint of the antennæ.

A few examples have been taken on palings at Blackheath, in Bexley Road, and round Lewisham, between the end of July and end of August.

Family 6.—Litosomidæ.

Genus 1.—Litosoma.

Species 6a.—Litosoma obsoletus.

ORTHOTYLUS OBSOLETUS, Pict. and Mey., Fieb., Europ. Hem., 289, 4.

Elongate, somewhat parallel. Greyish or yellowish-green, thickly clothed with short depressed white hairs, intermixed with longer, erect black ones. Cells of the membrane pale golden yellow.

Head—Posterior margin keeled. Antennæ pale yellow, 3rd and 4th joints brownish. Eyes pitchy-black. Rostrum pale yellow, apex piceous.

Thorax—Pronotum, callosities prominent, the transverse channel behind them deep. Elytra—Membrane very pale fuscous; cell nerves yellow. Cells pale goldlen yellow. Legs pale greenish-yellow. Thighs clothed with short, depressed, white hairs. Tibia pale yellowish. Tarsi yellowish, 4th joint and claws brown. Abdomen—Underneath fuscous-green.

This insect may be distinguished from *L. concolor*, to which it is closely related, by its larger size and duller appearance (concolor being of a deep, somewhat bluish-green colour, and having a much darker membrane), and its unicolorous cell nerves.

We have only seen a single example which we can refer with any certainty to this species. It was taken in Bexley Road, Kent, on the 5th August, and was probably beaten out of sallow.

Family 12.—Psallidæ.

Genus 3.—Psallus.

Species 8A .- PSALLUS WHITEI, n. sp.

Red or reddish-yellow, clothed with short, depressed, yellow and black hairs intermixed, the latter sub-erect. *Elytra* with a distinct trapeziform blackish patch.

Head—pitchy-black, posterior margin yellowish-white. Antennæ pale yellowish, 1st joint at the base narrowly black, 4th at its insertion blackish. Rostrum yellowish, 1st joint and apex black.

Thorax—Pronotum broad, callosities red, disc posteriorly inclined to reddish-yellow. Scutellum red, flattish convex, anterior portion in the middle piceous. Elytra-Clavus reddish-yellow, inner margin at the base narrowly blackish, suture at the apex slightly piceous. Corium, anterior margin as far as the 1st nerve red, posterior margin narrowly white, disc reddish-yellow, next the first nerve very narrowly yellowish, below the centre a distinct trapeziform blackish patch, its lower side almost in a line with the apex of the clavus. Cuneus red, base narrowly white. Membrane black, between the apex of the cuneus and the lesser cell nerve a white triangular patch, to the apex of which is attached a short oblong whitish patch, in the middle of the disc, and extending from in a line with the apex of the large cell to almost the inner margin, a broad, curved, whitish patch; inner marginal nerve blackish. Cell nerves red, apical half of the large cell nerve black; lesser cell almost entirely black, large cell black at the apex. Legs red. Thighs, 1st pair narrowly yellowish at the apex, 3rd with a blackish patch in the middle of the inner side near the apex. Tibiæ pale yellowish, with erect, somewhat spinose black hairs, 3rd pair in addition with black spots, apex narrowly brown. Tarsi brownish-yellow, 3rd joint and claws blackish.

Abdomen—Underneath red, with a piceous line along the sides as far as the genital segments.

Length  $1\frac{3}{4}$  line.

Resembles *P. varians*, but is of a deeper red colour (more like *roseus*), and the blackish patch in the corium is of a different shape to that in the latter species, besides which the *black head* is sufficient to enable any one to distinguish it.

We have only seen a single specimen (?), taken by Dr. Buchanan White at Rannoch, after whom we have much pleasure in naming it.

## FAMILY 13.—CAPSIDÆ.

Genus 5. - ATRACTOTOMUS.

Species 1.—Atractotomus magnicornis.

The description (without the synonyms) at page 435 of the "British Hemiptera," and figure 4, plate 14, of the same work, will both require to be transferred to A. mali, Mey. The latter insect literally swarmed on apple trees during the past season, and from a careful comparison of a long series of specimens with the insect described under the former name we have satisfied ourselves that it is an error.

With two exceptions, the distinctness of the following species determined more than a year ago, has been confirmed by Dr. Fieber.

## AQUATILIA.

Section 5.—Corixina.

Family 1.—Corixidæ. Genus 1.—Corixa, Geoff.

CORIXA VENUSTA, n. sp.

Broad, oval, dark brown with ochreous markings, delicately rastrate; pronotum with 6—7 straight yellow lines, corium with very fine transverse yellow lines interrupted by black longitudinal streaks, of which one across the posterior inner angle and one at the angle are the most conspicuous.

Head ochreous; crown brownish; facial depression in the 3 oval, deep, extending the whole length of the face, far up between the eyes.

Thorax—Pronotum with 6—7 straight, entire yellow lines, the dark intervals scarcely reaching the sides; disc in front with a very small carinate elevation. Elytra—Clavus with narrow, oblique, parallel yellow lines, those in the middle little shortened inwardly. Corium with very fine, somewhat contorted, transverse yellow lines, and broad, dark intervals, traversed longitudinally by a long, broad black vitta across the posterior inner angle, a short line at the angle, a narrow long line just within the anterior margin, all black, and an indistinct dark interruption down the centre of the disc; marginal channel pale livid yellowish, somewhat infuscated outwardly and at the base, apex yellow. Membrane with small, hieroglyphic, ochreous and black markings, on the inner margin straight and parallel lines; the disc traversed longitudinally by two more or less distinct black lines. Sternum ochreous, fuscous in the middle, scapular, pleura, and parapleurae, pale yellow. Legs brownish-yellow; palae of the 3 short, broad, roundly cultrate; 2nd pair, tibiae and tarsi black as the apex, 3rd pair, cilia of tarsi brown-black.

Abdomen ochreous, fuscous at the base.

Length 21-21 lines.

Allied to C. semistriata, Fieb.

Of this pretty and well-marked species, two examples were taken in small streams near Rothsay, Isle of Bute, in September, 1866 (Doug & Scott); and one was captured near Carlisle, in 1868 (J. Hunter).

## CORIXA DECORA, n. sp.

Narrow, parallel-sided, brown-black, rastration of pronotum, clavus, and corium very fine. Pronotum with seven fine undulating lines; Clavus and corium with fine, broken, yellow lines; marginal channel pale, infuscated at the base.

3. Head fuscous-brown, facial depression slight, flat, with a fine ridge in front. Therax—Pronotum short, rounded behind, in front with a very small elevation. disc with seven transverse, narrow, entire, yellow lines, the front ones undulating, the black intervals of about equal width. Elytra—Clavus with narrow. yellow lines scarcely reaching the inner margin, three or four of them at the base broader, oblique, and entire, the rest less regular, shorter, and interrupted, some outwardly furcate. Corium with short, interrupted, transverse, yellow lines, forming on the inner margin a longitudinal row of small linear spots, exterior to which is a narrow longitudinal black line, the posterior discoidal markings finer and somewhat twisted; marginal channel pale, infuscated on the base and edge, posteriorly with faint transverse lines; membrane suture yellowish, narrow, ill defined. Membrane covered with hieroglyphic markings, outer margin black. Sternum, scapulæ, pleuræ, and parapleuræ ochreous. Legs pale yellow; palæ, \$\delta\$, short, roundly cultrate; 2nd pair, apex of tiblæ and tarsi, and the cilia of the posterior tarsi, black.

Abdomen fuscous-black, indistinctly ochreous in the middle. Length 21 lines.

Allied to C. limitata, Fieb.

A single of taken in September, 1866, in a small stream running into Loch Fad, Isle of Bute (Scott).

## CORIXA DUBIA, (Fieb.), n. sp.

Black with yellow markings. *Pronotum*, clavus, and corium finely rastrate; pronotum with a distinct short keel, and 6—7 alternate, narrow, irregular, black and yellow lines; clavus with straight lines throughout; corium with interrupted unparallel lines; marginal channel pale, black at base.

3. Head yellow, brownish on the posterior margin of the crown; facial depression flat, extending just beyond the angle of the eyes.

Thorax-Pronotum in front with a fine, distinct, sharp keel, extending about onethird of the length; disc with 6-7 narrow, irregular, yellow lines, separated by as many similar black ones, the former being interrupted in places by the confluence of the points of the latter, some of the black lines being also abruptly shortened. Elytra-Clavus with narrow, oblique, parallel, yellow lines throughout, all more or less shortened inwardly, sometimes two or three furcate outwardly; corium with transverse, not parallel, subfurcate yellow lines, twice interrupted-first near the inner margin, leaving there a longitudinal row of short lines; second, in a less degree and less regularly, just within the outer margin; marginal channel pale, black at the base, and somewhat infuscated posteriorly; membrane-suture yellow, distinct; membrane covered with twisted, hieroglyphic characters, straight and parallel on the inner margin; outer margin black. Sternum black, scapulæ, pleuræ, and parapleuræ pale yellow, black inwardly. Legs yellow; palæ of the & rather broad, roundly cultrate; 2nd pair, tibiæ and tarsi, at the apices black; cilia of the posterior tarsi brown.

Abdomen black.

Length 21 lines.

Allied to C. limitata, Fieb. A single & taken in September, 1866, in a small stream running into Loch Fad, Isle of Bute (Scott).

## Corixa perplexa, n. sp.

Broad, ochreous with black markings; pronotum, clavus, and corium inely rastrate; pronotum with 7—9 very fine, irregular, confluent lines; clavus with oblique, irregular lines; corium with short, twisted lines nterrupted on the inner posterior angle; marginal channel livid pohreous.

 Head ochreous, brownish at the base of the crown, facial depression shallow, flat, reaching to the angles of the eyes.

Thorax—Pronotum wide, rounded behind, in front a very short keel, disc with 7—9 very fine, irregular black lines, confluent in places, the ochreous intervals rather wider. Elytra—Clavus with oblique black lines; those at the base narrow, straight, with clear ochreous intervals, the remainder broader, irregular, undulating, sometimes furcate outwardly; corium throughout with irregular, abbreviated, twisted, transverse, black lines, their outer ends more or less joined together; inwardly, on the inner posterior angle, the lines are traversed by, and joined to, a short, irregular, longitudinal black line, and there is a still shorter one at the apex of the clavus; marginal channel livid ochreous; membrane suture distinct, ochreous; membrane covered with short, twisted, hieroglyphic markings, the inner and posterior margins with short, straight, close, parallel black lines. Sternum, scapula, pleura, and parapleura pale ochreous. Legs pale ochreous; palae, 3, narrow, roundly cultrate; 2nd and 3rd pairs, tibia rather infuscated; 3rd pair, tarsi, cilia black.

Abdomen black, posterior segments fusco-ochreous in the middle.

Length 21-21 lines.

Allied to C. limitata, Fieb.

Two specimens taken in a small stream at the road-side, near Rothsay, Isle of Bute, in September, 1866 (Douglas).

## CORIXA FABRICII.

Corisa Fabricii, Fieb., Spec. Coris., 33, 38, t. 2, fig. 16 (1851). Flor, Rhyn. Liv., i, 796, 9 (1860).

CORISA FABRICII, Walleng., Oefv., K. Vet. Akad., 149, 16 (1854). Fieb., Europ. Hem. 98, 31 (1861).

? Corisa abdominalis, Fieb., Syn. Coris., No 22 (1848).

Brown-black. *Pronotum*, clavus, and corium rastrate. *Pronotum* with 7 yellow lines, marginal channel of the elytra black, the basal inner half yellowish.

Head yellowish, with the crown brown, or entirely brown; facial depression in the \$\delta\$ extending a little beyond the lower angles of the eyes, flat, not hollowed out, on the front margin carinate.

Thorax—Pronotum rounded behind, in front a small keel, disc with seven, mostly straight, yellowish lines, sometimes interrupted or obscured. Elytra with a

few whitish hairs; clavus, as far as the middle, with entire, straight, rather oblique, parallel, yellowish lines, posteriorly the lines are slightly undulating, and sometimes shortened on the inner side; corium with fine undulating, or broken and angularly confluent, transverse yellowish lines, interrupted near the inner margin, and there forming a longitudinal series of very short marks, posterior inner angle narrowly black; marginal channel black, the basal inner half and the apex yellowish; membrane-suture narrowly yellow; membrane covered with small, irregular pale markings; exterior margin black. Sternum black; scapulæ, pleuræ, and parapleuræ black inwardly, more or less broadly pale yellow outwardly. Legs yellow or brown, anterior thighs with a fuscous blotch at the base; palæ in the \$\delta\$ short, roundly cultrate, in the \$\frac{9}{2}\$ arrower longer, and more acute.

Allied to C. mæsta, Fieb.

Taken at Rannoch, by Mr. E. C. Rye and Dr. F. Buchanan White also in Fifeshire, by Dr. Power.

Note.—Fieber described this species in 1848 (Synopsis Corisarum Europæ) under the name of *Corisa abdominalis*, but in 1851 (Species Generis Corisæ) he redescribed it under the name of *C. Fabricii*, without giving any reason for the change. Wallengren and Flor have since adopted the latter name, as also has Fieber again in the "Europäischen Hemiptera," so that as the species has become generally known as *C. Fabricii*, we have not revived the prior name, prefixed to a short and somewhat meagre description, although in strictness the latter should be the name used.

(To be concluded in our next.)

## DESCRIPTION OF A NEW SPECIES OF BIBIO. BY G. H. VEBRALL.

On the wings of this and allied species of *Bibio*, only two blackish strongly-marked veins reach the margin, the first of these (the subcostal) ends in the stigma, the other (the cubital) springs from the first at about two-thirds of its length, and ends before the tip of the wing. From the base of the wing another blackish vein (the discoidal) starts, which becomes indistinct about the middle, shortly afterwards forking and ending in two indistinct veins below the tip; this vein, at the end of its blackish portion, is connected with the base of the cubital by a blackish oblique transverse vein,—which I call *the* transverse vein as in the whole order of *Diptera* it is the chief connecting vein between the front and hinder portions of the wing.

B. ANGLICUS; & ater, pedibus concoloribus, nigro-pilosus; \( \foatin \) rufa, nigro-pilosa, capite, pleuris, scutello, pedibusque nigris; nervo transverso parte nervi cubitalis basali longiori.

Long. corp. 3-3\frac{1}{2} lin.

The only described European species with black males and rec females having black legs are the common hortulanus, Lin., and siculus Lw. From hortulanus it differs as follows:—

#### ANGLICUS.

- 3 9. Smaller size, averaging 3 31 lin., 3 9. Larger size, averaging 34 lin., alar. alar.  $6\frac{1}{3}$ ;  $23\frac{1}{3}$ , alar.  $6\frac{3}{4}$ .
  - Transverse vein about 11 times as long as the basal portion of the cubital vein.
  - Cubital vein rather wavy.
  - Indistinct portion of cubital vein before the fork longer.
  - Edge of the alulæ blackish.
  - Sub-costal vein with several bristles on it, and costal pubescence stronger.
  - Knob of the halteres narrower.
  - Joints of the antenna more distinct.
- 3. Pubescence on all the abdomen blackish.
  - Pubescence on the under-side of the thorax blackish.
  - Hairs on the scutellum all black.
  - Belly duller, rather hairy.
  - Legs stouter, and all over more thickly beset with stronger bristles or hairs, which are all black: the hinder trochanters are more even at their edge, the femora are rougher, hind pair slightly more clavate, the middle pair of legs is especially more thickly beset with bristles; the tarsi are shorter and stouter, and the close short pubescence beneath them is blackish-grey.
  - Wings not so decidedly milky-white.
- Q. Hairs on the abdomen all black, except on the sides of the basal segment, where they are pale.
  - Few hairs on thorax and tip of scutellum stronger and darker.
  - Pubescence about the head shorter and blacker.
  - Front rough and dull.
  - Legs rather more bristly; tarsi thicker and shorter.
  - Wings with darker uniform tinge.

#### HORTULANUS.

- 7½; \$ 33, alar. 84.
  - Transverse vein about 1 the length of the basal portion of the cubital vein.
  - Cubital vein nearly straight.
  - Edge of the alulæ not very dark.
  - Sub-costal vein bare or nearly so.
- 3. Pubescence at the base and sides of the abdomen whitish.
  - Pubescence on the under-side of the thorax pale.
  - Hairs mostly pale on the scutellum.
  - Belly shining, almost bare.
  - Legs thinner, and all over more sparingly beset with bristles and hairs, which are evidently pale on the anterior femora; the hind trochanters are somewhat notched, the femora are more shining; the middle pair of legs is very sparingly clothed with bristles; the tarsi are longer and thinner, and the close short pubescence beneath them is whitish-grey.
- Wings milky-white, except near the costa.
- Q. Hairs on the abdomen all pale.
  - Few hairs on thorax and tip of scutellum weaker and paler.
  - Pubescence about the head partly pale.
- Front smooth and shining.
- Legs slightly less bristly; tarsi thinner and longer.
- Wings with the tip evidently paler.

270 [April,

Loew's variety hirtipes of hortulanus only approaches it in the more abundant bristles on the legs, it being larger than the true hortulanus with whiter wings, and more white-haired abdomen.

From siculus (Loew, Linnæa i, 344) the female may be at once known by the colour of the thorax, which is black, but the male is not so readily distinguished; Schiner (Fauna Austriaca Diptera, ii., 359) says that it has the base of the abdomen always more or less with a pale pubescence, that the transverse vein is longer than the basal portion of the cubital vein, and that the wing is darker about the costa, but Loew, in the original description says, that the base of the abdomen is only sometimes white haired; siculus is also the same size as hortulanus, therefore larger than anglicus, and is confined to the south of Europe in Sicily and Dalmatia. The male of marci may be at once distinguished by its much larger size and different neuration of the wings, which resembles hortulanus.

The species is very abundant in the neighbourhood of London, occurring in a garden here (Denmark Hill) by hundreds on leaves of shrubs, principally on currant bushes; the female is, as usual, much more sluggish, and therefore apparently rarer than the male, which, on sunny days, is continually flying and hovering about the bushes. appears about the third week in April, lasting about a fortnight, almost disappearing before the time for hortulanus, which latter comes out about the third week in May; I believe it is common all over the south of England, as it is represented in all collections under hortulanus, though in the British Museum there happen to be only females, which may perhaps account for its having been overlooked. There is certainly no species described by Meigen, Macquart, Loew, or Zetterstedt, with which this can be identical, nor can I find a single description of hortulanus but what says "albopilosus" or its equivalent; I call it anglicus, not that I approve of local names, but I think it suits well here in opposition to siculus, and even supposing it should eventually be found on the continent, it will show that the species was first noticed in England, and is abundant here.

Denmark Hill, London: March, 1869.

DESCRIPTIONS OF SPECIES OF LEPIDOPTERA, CONFOUNDED WITH OTHERS DESCRIBED BY LINNÆUS AND FABRICIUS.

BY ARTHUR G. BUTLER, F.L.S.; Assistant, Zoological Department, Brit. Mus.

The following species are some that I have determined during the preparation of a Catalogue of the *Rhopolecera* of Fabricius: many of the errors committed being due to the fact of some authors having

1869.]

omitted to examine the figures by Clerck as compared with those of Drury or Cramer, and also the types of the Fabrician species in the Banksian collection.

## Genus Euchloe, Hübner.

- 1.-Euchloë Calleuphenia, Butler.
- 3 9, Anthocharis Eupheno, Hübner, Samml, Eur. Schmett., 1, pl. 84, figs. 421-3 (1805); but not of Linnæus.
- 3, Germany (obtained from Herr J. J. Becker); ♀, Gibraltar (obtained 1866 from Mr. Whitely). B. M.

This species differs from Eupheno, Linn. (the male of Belia, Linn.) in the male having the prothorax reddish, the orange area of the front wings limited by a blackish streak extending nearly to the anal angle; in Eupheno the orange is cut off obliquely before it reaches the angle: below, both sexes have the hind-wings yellow, varied with white spots and marbled with greyish olivaceous; Eupheno has the hind-wings yellow, not spotted with white, and with three interrupted angulated fulvous streaks crossing the wings at regular distances; Mr. Blackmore, who has taken a good many specimens of the latter species in Tangier, has generously presented four fine males and a female to the collection: this species is figured by Pierret under the name of Douei.

## 2.—Euchloë Crameri, Butler.

Papilio (D. C.) Belia, Cramer, Pap. Exot., 4, pl. 397, figs. A, B (1782); but not of Linnæus.\*

Alæ suprà albæ, ad basin cinereæ; anticæ macula disco-cellulari, punctis minutis costalibus apiceque obscurè cinereis, maculis tribus punctisque ciliaribus albis: posticæ immaculatæ: corpus cinereum, præ-virescens, argenteo-hirtum; antennæ cinereæ, albo-squamosæ, puncto ad apicem clavæ fulvo.

Alæ anticæ subtus albæ, maculâ disco-cellulari, pupillà argenteà, punctisque costalibus nigris; ared apicali olivaceo-viridi, maculas octo marginales, sub-argenteas, inæquales, limitante: posticæ olivaceo-virides, maculis plurimis inæqualibus argenteis ornatæ: corpus albido-virescens.

Exp. alar. unc. 1, lin. 10.

B. M.

S. Europe (obtained from Herr J. J. Becker).

## Genus Papilio, Fabricius.

3.—Papilio zonaria, Butler.

Papilio (E. A.) Sinon, partim, Cramer, Pap. Exot., 4, pl. 317, figs. C, D (1782); but not of Fabricius

<sup>\*</sup> The Ausonia of Hübner cannot stand for this species, but for Dr. Boisduval's Simplonia .- A. G. B.

Alæ suprà nigræ, fasciis duabus angustis rectis (quarum mediana latior, apud costam bifurcata), lineolá intermediá discoidali necnon altera (cum puncto) sub-apicali, flavido-albidis; maculis octo anticis sub-marginalibus pallidioribus; lunulis sex (sexto duplici) posticis albidis; maculá elongatá sub-anali interná coccineá: caudá alarum apice ciliisque analibus albis. Corpus fuscum, lateraliter pallidè fulvo-striatum; antennæ nigræ, puncto apicali albido.

Alæ subtus multo pallidiores, brunneæ, maculis fasciisque supernis partim nigro-marginatis albidis; posticæ striå coccineå, alam transerrante, sub-interno-basali, ad angulum analem angulatå: corpus fulvo-albidum.

Exp. alar. unc. 3, lin. 2.

St. Domingo (obtained 1855; collected by Mr. Tweedie). B. M.

This is the Sinon of Doubleday's list, but a comparison of it with the type of the Fabrician species in the Banksian collection shows it to be abundantly distinct; indeed, Mr. Doubleday subsequently became aware of this fact, as is evident from a note in his private copy of Boisduval's Species General, "Another sp. see Bank. Cabt." I am indebted for this, and many other interesting notes upon Fabrician butterflies, to Mr. Osbert Salvin, in whose possession Mr. Doubleday's copy of the above work now is, and who kindly lent it to me, to assist me in my Catalogue of the Rhopalocera of Fabricius. Zonaria is most nearly allied to Philolaüs, from which, however, it is abundantly distinct.

## Genus Pyrrhopyga, Hübner.

4.—Pyrrhopyga Verbena, Butler.

272

Papilio (P. U.) Phidias, partim, Linnæus; Clerck, Icones, pl. 44, figs. 3, 4 (1764).

Q Alæ suprà fuscæ, æneo-nitentes, posticæ obscuriores ciliis omnibus
niveis: corpus fuscum, collo anoque coccineo-hirtis; antennæ nigræ.

Alæ subtus fuscæ, anticarum basi posticarumque area interna æneonitentibus, ciliis albis: posticæ fascia externo-costali coccinea: corpus æneofuscum, capite, punctis lateralibus anoque coccineis.

Exp. alar. unc. 2, lin. 1.

S. America (from Mr. Milne's collection). B. M.

This species is closely allied to Acastus of Cramer, but differs in its more robust form, in the wings being more brassy in colouring, with scarcely a trace of the blue shot, and in the hind-wings below having a scarlet (not yellow) band upon the outer margin. Mr. Hewitson preferred that I should describe this species. We have a good series of Acastus, both sexes, not differing in colour.

### Genus NYCTALEMON, Dalman.

## 5.—Nyctalemon zodiaca, Butler.

§ Alæ suprà nigræ, ad basin virescentes, fascia media communi lata, aureo-viridi; anticæ fascia altera lineolari, sub-apicali, pallidiore, striolisque costalibus ad basin aureo-albidis: posticæ cauda cæruleo-alba, ciliis albis; macula squamisque sub-marginalibus analibus: corpus virescens, abdomine pallidiore.

Alæ subtus pallidè virescentes, fasciis fere velut in N. Orontarid, Hübner (Orontes, Linn.), maculis autem posticis sub-apicalibus in marginem sub-rotundatis viridibus: corpus thorace albido, abdomine aurantiaco, cirrhis maris analibus perlongis, ochreis. Exp. alar. unc. 4, lin. 7.

N. China (obtained 1857, from Mr. Fortune's collection). B. M.

This is the *Orontes* of Mr. Walker's catalogue, but is quite distinct from the *Orontes* of Linnæus and Clerck.

## 6.—Nyctalemon Zampa, Butler.

- Alæ multo majores, pallidiores, colore fundi discalis post fasciam mediam magis diffuso, areaque apicali angustiore; subtus, fascia media alba latior, aliter velut in mare.

Exp. alar. unc. 6, lin. 7; 3 unc. 5, lin. 11.

3, Silhet (obtained 1845, from the Rev. J. Stainsforth).

♀, ——? (from Mr. Children's collection). B. M.

This species is evidently quite distinct from the *Patroclus* of Linneus (Clerck's Icones, pl. 37, fig. 1), which may possibly be the female of *Patroclaria*, Hübner (*Patroclus*, Cramer, Pap. Exot., 2, pl. 109, figs. A, B), this species, however, seems again distinct from its near ally the *Hector* of Walker, which we have from Borneo and the Philippines.

British Museum: March, 1869

Aphodius porcus, a cuckoo parasite on Geotrupes stercorarius.—Last autumn, I examined the economy of Geotrupes stercorarius in the matter of oviposition, and in doing so met with the unexpected fact that Aphodius porcus was parasitic upon it. As such a habit must be regarded as a highly abnormal one in a Lamellicorn beetle, and consequently requires a considerable amount of proof to establish it, I have given my observations somewhat fully, and have added an account of the oviposition of Geotrupes stercorarius, both because it is necessary towards understanding the proceedings of Aphodius porcus, and because, though supposed to be known by everyone, no one appears to be acquainted with the details of it, nor have I been

274 [April,

able to find these recorded, albeit *G. stercorarius* is, I suppose, abundant in every meadow. To observe properly the burrows and tunnels of *G. stercorarius*, requires the careful raising of considerable pieces of turf, a work of some labour, and not to be regarded as beneficial to pasture land.

Under a patch of cow or horse droppings, I frequently found a *Geotrupes*, alone, in a burrow of several inches in length; but, whenever the carrying down of pabulum and the deposition of ova were going on, there were invariably a male and female beetle in the burrow.

This burrow extends nearly vertically downwards to a depth of from six to eight or even twelve inches; and as many as five or six pairs of beetles are sometimes at work under one dropping. This vertical burrow is almost always made without any excavation, simply by the thrusting of the earth aside as the beetle forces its way down. It often happens that, when the mouth of the burrow is beneath the centre of the dropping, this opening is kept free for the supply of pabulum, and a subsidiary canal is carried along the surface of the ground from this point to the edge of the dropping, where the removed earth is ejected. The cavities wherein the eggs are laid branch horizontally from the bottom of this burrow in various directions, and at slightly varying heights, to the number of six or eight, the lower ones being made last. Each branch is about an inch wide, and four or five inches long. The earth is removed from these tunnels, and forms the little heaps so conspicuous beside the droppings beneath which stecorarius is at work. Each of these horizontal tunnels contains one egg, and a store of pabulum. The rounded further end of the tunnel is firmly packed with concentric layers of dung. In the centre of these is a cavity, half-an-inch deep, and three-eighths high. Its slightly hollowed floor is semi-circular behind, and in front nearly straight. The arched roof descends behind to the floor, and the front of the cavity is a perpendicular wall. This cavity is carefully lined with, perhaps I ought rather to say is formed of, a layer of earth worked to a clay-like consistence, and marked very often inside by the front tibiæ of the beetles, as if they had been used as trowels.

The total capacity of the cavity would be sufficient to hold half-a-dozen eggs, one only, however, lies loose on the floor; it is quite unsoiled by the earth, nor is a loose particle of earth often to be found in the cavity. How the beetles close it without allowing earth to fall in, I have been unable to devise any method of observing; it is done comparatively loosely, whereas, as I have mentioned above, the dung previously arranged round the end of the tunnel is tightly packed, as is also that which afterwards is packed, layer upon layer, into the remaining part of the tunnel. The last half or three-quarters of an inch of the tunnel next the perpendicular burrow is filled, not with dung, but with earth.

The egg is  $\frac{3}{10}$  of an inch in length, rather thicker at one end (where it is  $\frac{1}{10}$  inch in thickness, than at the other), and slightly contracted in the middle; it is of pale straw colour, very delicate and easily broken. Before the young larva is hatched, the egg increases slightly in length, and becomes of nearly double the previous diameter, viz., about  $\frac{1}{0}$  inch. This appears to arise from imbibition of fluid, and possibly also partly of air.

These arrangements, so carefully made by Geotrupes stercorarius, are turned to their own benefit by Aphodius porcus. At or about the time the egg cavity is being closed, the  $\circ$  of A. porcus arrives and makes her way into it, usually, I think, by

1869.]

forcing her way through the earthen wall just after it is closed in. There she eats the egg of stercorarius, a mass as large as herself, greater, I suspect, if reckened by weight. My observations do not show how long this takes her, but I should, judging from the different stages at which I have seen the operation, consider a week as about the time employed. When this is completed, she succeeds in quitting the tunnel. The eggs of A. porcus are laid, each by itself in a little spherical cavity, as carefully formed as that of stercorarius, though not lined with earth, but similarly much larger than the egg itself, which is almost a sphere of a little under  $\frac{1}{2}$ 0 inch in diameter. These little cavities are irregularly disposed in the pabulum surrounding the cavity made by stercorarius, the space of which is, finally, almost entirely used up in affording the spaces around porcus' eggs. I have counted as many as ten porcus' eggs so disposed, and believe there were frequently more, in instances in which I did not count them. In the mean time, the egg of stercorarius becomes flaccid and finally disappears; and I have several times seen A. porcus' nose applied to it, as if discussing its contents.

As to the extent to which A. porcus destroys the eggs of stercorarius, I have a note, dated Sept. 21st, 1868, that I brought home the contents of 29 tunnels, on examining which, 15 appeared undisturbed, 6 contained porcus at work, and 8 had been visited and quitted by porcus. In these, the only cavities present were those around porcus' eggs. No trace of stercorarius' eggs remained, and only the disturbed clay represented its surrounding cavity, A. porcus having completed her work and disappeared.

On another occasion (Oct. 6th), I took 13 A. porcus in the tunnels of G. ster-corarius, under one patch of cow dropping. In this instance, only a fourth of stercorarius eggs were undisturbed by A. porcus. On two occasions, I have found three A. porcus in one egg cavity, and several times two. I did not ascertain whether these were 3 and 2, but suppose them to be females accidentally met on the same errand.

I have never taken A. porcus elsewhere than in the egg cavity of G. stercorarius' nest, except on one occasion, when, for the purpose of making this comparison, I instituted a careful search for it in the loose dung lying on the surface. In about an hour I found four. I then devoted an equal time to a search in their favourite habitat beside stercorarius' egg, and found twelve. Though several common Aphodii and other beetles swarmed in the droppings beneath which stercorarius was at work, I never found any other beetle in his burrows, except an occasional elytron, as though only the remains, after some predaceous beetle had devoured it, had been accidentally brought down with the stores of pabulum. I once found the remains of a beetle squeezed flat against the end of a burrow, obviously by the tight-packing process of G. stercorarius. This, on examination, proved to have been an A. porcus, which had probably gone down a little too soon. In undisturbed tunnels, no traces of such eggs as those of porcus could be found, though a small larva (Aphodian?) occasionally occurred somewhere in the length of the burrow, the egg having probably been accidentally brought down. These observations prove that A. porcus destroys the egg of G. stercorarius, replacing it by her own. Some doubt may exist as to her eating it, as it is possible that it is injured by her tibiæ, &c., and that its contents soak into the surrounding material. Still, were this so, the egg would surely sometimes escape: its disappearance would not exist pari passû with porcus' 276 [April,

oviposition; and, where there is so little room for superfluous fluid, the draining away of the egg-contents would surely leave some trace. I have, therefore, little hesitation in asserting that the egg is eaten by *Aphodius porcus.*—T. Algernon Chapman, Abergavenny, *March*, 1869.

Habitats of Ctenicerus pectinicornis and C. cupreus.—Stephens in his "Manual of British Beetles" assigns as locality for the former of these species; "grassy places in elevated districts;" and to the latter, "similar situations with the foregoing." I have, however, always found C. cupreus at considerably higher altitudes than C. pectinicornis. Thus the latter abounds in June, in meadows about Stockport and Staleybridge; but, on ascending the flanks of Shaw Moor, it is entirely replaced by C. cupreus, at the height of about eight hundred feet above the sea level. In central Europe the same rule appears to hold good, C. pectinicornis prevailing at the base of the mountains in Bohemia, whilst cupreus (along with castaneus in smaller numbers) ascends to about two thousand feet above the sea.—

J. W. Slater, Lord Street, Halifax, 7th January, 1869.

A Trogosita destructive to silk.—On a recent visit to Basle, my friend Mr. H. Knecht presented me with a specimen of an apparently undescribed Trogosita, several of which were found alive in the interior of a bale of raw silk imported direct from China. The beetles (or their larvæ?) had gnawed through some of the tightly packed layers of silk, thus materially injuring its value for industrial purposes.—ALBERT MULLER, Penge, S.E., March, 1869.

Note on Apion scrobicolle, Gyll .- This insect, of which the sole recorded locality is England, appears to have hitherto escaped a place in our lists. It was described by Gyllenhal in Schönherr's Syn. Ins., v, p. 379, 9, and a translation of that description is to be found at p. 13 of the recent monograph of the Apionides ('L'Abeille') by M. Wencker, who places it next to A. subulatum, in the second section (having the rostrum gradually subulated, and the tarsi black in both sexes) of his first group, Subulirostres. M. Wencker reproduces Gyllenhal's locality without addition or comment; and the insect is accredited to Britain only in De Marseul's catalogue, which of course also follows the latter author. It is described as black, almost glabrous, with a short wide head, of which the vertex is convex and smooth; a rostrum as long as the head and thorax, slightly curved, distinctly subulate towards the apex, and brilliant; a transverse thorax, almost half as wide again as long, strongly and closely punctured, with a short deep stria in the middle of its base; wide elytra, rounded at the shoulders and extremity, with projecting humeral callus, rather deep punctured striæ, and flat, finely shagreened, glabrous, slightly shining interstices; and long, stout, black legs .- E. C. RYE, 7, Park Field, Putney, S.W., March, 1869.

Discovery of a new British Bee (Colletes cunicularia, L.).—The announcement of an addition to the list of the British Apida is an incident of rare occurrence; in my opinion this should not be the case, and I am satisfied it would be otherwise if Entomologists, when visiting remote or rarely-frequented localities, particularly at early periods of the year, were to capture a few Hymenoptera as well as the insects of the more favourite orders, Lepidoptera and Coleoptera.

1869.]

On the 1st of March I received from Mr. Nicholas Cooke, of Liscard, near Birkenhead, a pair of bees, which he informed he could not find described in my book on the Bees of Great Britain, and as this opinion was verified by his brother, Mr. Benjamin Cooke, he felt satisfied they were likely to prove new. The bees were forwarded to me, and I at once recognized them as an unrecorded British species of the genus Colletes; the Apis cunicularia of Linné, and the C. hirta of most continental authors: it is a fine addition to our fauna, being the largest species found in Europe.

Without an account of its capture, it would appear strange that so conspicuous an insect should not have been previously discovered. Mr. Cooke informs me that in 1867, his son Isaac (accompanied by his friend Mr. Samuel Holdsworth, Jun., a Lepidopterist,) was on an entomological excursion at the Undercliff, Isle of Wight, and that between Ventnor and Niton, in the month of May, his son captured four males and five females; this is an early period of the season, when entomologists rarely visit distant localities—I allude to those who make annual excursions for fresh air and exercise; this is usually done about the end of summer or during the autumn. This fact will, in some degree, account for the Colletes having remained previously undiscovered. All the species of the genus delight in forming colonies in sandy banks, or cliffs; therefore, the chance of others finding the new bee is rendered more probable than if it belonged to a group of the more solitary species of the family. I hope myself to have at least the pleasure of searching for it during the coming season.—Frederick Smith, British Museum, March, 1869.

Two additions to the British Trichoptera.—I have recently received the two species noticed below.

- 1. Halesus auricollis, Pictet (Phry. auricollis, Pict., Recherch., p. 141, t. 8, fig. 1; Hal. nigricornis, Brauer, Neurop. Aust., p. 47, nec. Pictet), belonging to the true genus Halesus, as restricted by me (i.e. posterior wings of & without a pouch). A moderately large dark insect, with shining smoky-grey anterior wings, with darker pterostigma, and with a large and conspicuous white spot at the thyridium, and indistinct paler irrorations. Taken in some numbers at Rannoch, Perthshire, by Dr. Buchanan White, to whose kindness I am indebted for a fine series. A detailed description is postponed for my proposed first supplement to the "Trichoptera Britannica." I have carefully compared it with Pictet's type in the British Museum, and with Braner's types in my own collection, and consider it to agree sufficiently well, though there are some very slight discrepancies. The suspicion expressed by me in the "Annual" for 1868, p. 4, that my guttatipennis might be identical with Pictet's species, is unfounded. That species is thoroughly distinct, and my exponent of it still unique as British, though I have since seen Swiss examples.
- 2. Tinodes Schmidtii, Kolenati, (Potamaria Schmidtii, Kol., Gen. et spec. Trichop., pt. 1, p. 100, pt. 2, p. 229; Diplectrona Schmidtii, Brauer, Neurop. Aust., p. 38). A small insect belonging to the group of T. pusilla, differing totally from our recorded species by its dark coloration; the wings being smoky-black with a more or less distinct half-moon-shaped golden spot in the apical half, formed by hairs of that colour. Notwithstanding its diversity in colour from most other species of the genus, it is a true Tinodes, as the appendices alone would prove, these being all

278 [April,

arranged after one plan in all the species; other black species are known on the Continent. I have seen five examples taken at the end of the summer of 1868, in Monsall Dale, Derbyshire, by Mr. Edwin Brown, who liberally presented me with a pair. It affects mountainous districts, and is common in central Europe. I have a fine series from Carinthia, taken by Professor Zeller, and types from Herr Brauer.

—R. MCLACHLAN, Lewisham, 1st March, 1869.

Note on Xylina conformis .- Mr. E. Newman seems to think that very little is known about this rarity; so I will inform your readers that I had an old example which was taken near Halifax, in spring, many years since. not know what it was, but felt sure it was new to our list. It was seen soon afterwards by several London lepidopterists, but was considered by them as only a variety of X. rhizolitha (lambda); this I never agreed with, but put it aside for further information; it shows the reniform stigma distinctly red, as do the more recent ones. Some years since my old friend Mr. John Scott was in Wales, and obtained a fine pair of conformis from the original captor; one of these Mr. Scott most kindly gave to me; and as soon as I saw it, my attention was called to my old hybernated specimen. On comparison, I found the latter much paler, but still preserving the character of the Welsh insect; there is a marked difference between that and the continental examples that I have seen, which latter are broader in the fore-wing, and more silvery; the Welsh specimens are dark rich chocolate. When I received Mr. Scott's example, I gave my original one to my friend Mr. Thomas Wilkinson, of Scarborough, who still has it. I should like to know whether the specimens of the allied species, Zinckenii, taken in England, vary in the same manner?

I have seen four or five British individuals of X. conformis. The late Rev. G. R. Read had a specimen from the original captor; at his death it was still among his duplicates, and when I packed up his insects to send to Mr. Stevens for sale, I put it in its right place in the cabinet, it was sold with the others, but I know not who bought it.—T. H. Allis, Osbaldwick, York, March 3rd, 1869.

Leucania albiquacta at Yaxley.—In 1862 or 1864, which, I am not quite sure, it was one of my last visits to Yaxley, I happened to want a few fresh specimens of L. lithargyria, and on picking them out, took, what I thought, a small variety, which I have had in my cabinet ever since. Early this year my friend H. Doubleday was kind enough to send me a foreign type of albiquacta, (a  $\circ$  darkly coloured), as soon as I saw this, it called to mind this example, which I sent to Mr. Doubleday to examine. I have his reply to day, that it is a male of albiquacta. This is curious, as it is the oldest recorded capture of this rare insect in this country.—ID.

Curious variety of the larva of Vanessa cardui.—The following note contains the solution of one enigma, but presents another for investigation and solution in its turn.

On July 17th, 1865, Dr. Knaggs sent me (from Folkestone) a larva he had found feeding on Mallow (Malva sylvestris). It was then half-an-inch long, with seven rows of spines, all black in colour, except those in the dorsal and sub-dorsal rows on the 6th, 8th, and 10th segments, which were pale primrose-yellow; the

1869.] 279

head and upper surface of body black, with a double dorsal stripe of pale yellow, and a stripe of same colour above the legs; the belly and prolegs deep olive-brown. Unfortunately it died when about to moult, and though at the time I reported it as an immature V. cardui, yet my figure remained doubtful.

This then was my enigma—to settle whether this larva was cardui or not.

In the last week of September, 1868, the Rev. E. Horton sent me some of a number of larva he had recently taken, varying considerably in growth, but all quite similar to the one above described, and found also on the same food, Malva sylvestris. The mallow plants were growing chiefly on the top of a hilly grass field near a hedge, and some in a clover field on the other side of the hedge, all within a radius of fifty yards; and Mr. Horton's attention was arrested by the mixed-up appearance of certain of the leaves.

On examination, he found the edges of some were drawn together by threads into a kind of purse, each containing a larva; and he noticed that in every case but one, the larva was eating away the upper-surface of the leaf within the purse. The youngest of those I had the pleasure to receive from Mr. Horton on the 25th of September was precisely like the figure taken in 1865, but had attained nearly an inch in length, and showed indications of a narrow, short, oblique yellow streak from near each spiracle backwards, and the tips of the yellow spines were black.

After moulting, the change in its appearance was very great; and its manner of constructing a kind of tent by spinning three or four mailow leaves together, and its habit of feeding concealed therein until its ravages had partly exposed it to view, and then abandoning its ruined abode and making another with fresh leaves, reminded me so much of Atalanta, that I now began to think I had been quite wrong in supposing the species to be cardui.

The growth was very rapid, the primrose-yellow and the black spines were replaced by others uniformly of a dirty greenish-yellow tint; the whole skin of the upper part of the body was now black, but the extraordinary and puzzling feature now assumed was a dense covering of pale grey hairs, nearly as long as the spines, and almost hiding them; such a combination I had not seen before, but here I had larva both spiny and hairy.

I will here confine myself to the details of one, which will do for all the others. October 9th, larva full grown, about 15 inch long, and moderately stout in proportion; the second segment bearing only two spines, sub-spiracular in position; the third and fourth each bearing four spines, sub-dorsal and spiracular; but all the other segments, save the thirteenth, bearing seven spines, of which the middle or dorsal one stands a little in advance of the rest, close to the front edge of each segment; all these spines were branched and bulbed at the base, and the subspiracular series formed the centres of fascicles of hairs nearly as long as themselves. The body blackish above, with a deep black dorsal stripe, and a primroseyellow stripe running above the legs, but hardly indicated on the thoracic segments; the belly and ventral legs deep olive-brown, marked with goldenochreous, generally much hidden from view by the grey hairs diverging from around the base of each sub-spiracular spine, which there interrupts the before-mentioned vellow stripe; a little above the said stripe there is on each segment a slight streak of yellow, sloping upwards to the segmental divisions. The spines are dirtygreenish in colour, with their bases showing slightly pinkish.

The spiracles are greenish-grey, with black centres. The head black, and, like the body, covered with pale grey hairs.

October 10th, after first suspending itself to the top of its dwelling, the larva selected for description left its cave and crawled to the gauze cover of its cage, and on the 11th suspended itself there, and became a chrysalis on the 13th.

The pupa about an inch in length, moderately stout, and of the usual Vanessa form.

The ground colour rather dark brown, abdominal divisions bluish, a narrow interrupted stripe of ash colour down the back of the abdomen, and two broader pale ashy stripes along the sides, the superior margin of each wing-cover pale ash colour, the antennæ cases and their knobbed tips marked with ashy, an obscure streak of same tint on the middle of the wing covers, the spikelets ashy, but glossed with gold or silver according to the angle of light. The dark portions of wing cases blackish, the thorax and abdomen sprinkled with atoms of black.

Early in the first week of February, 1869, Vanessa cardui came forth; no doubt prematurely, from being kept in a warm room.

My other pupe are still alive, but Mr. Horton having kept his out of doors has not been so successful, and reports them all dead.

My old puzzle of 1865 is thus made clear, but as Mr. Horton suggests, there now arises a question as to the how and the why of the larva's hairy coat.

Had these mallow-eaters become hairy through eating the downy mallows, whilst the thistle-fed specimens, as I have seen more than once, are clothed with

Or were they a second broad, thus clothed for protection against possible cold in late autumn?

How do the second brood of cardui manage in the South of France?—WM. BUCKLER, Emsworth, March, 1869.

Winter Captures.—I send a list of some of my winter captures, as follows:—Borborus pedestris, December 10th; Exapate gelatella, ?, December 15th, &, January 7th; Gracilaria elongella, December 30th; Hybernia leucophæaria and Tortricodes hyemana, January 20th; H. progemmaria, February 6th; Cidaria psittacata, February 9th; Eriogaster lanestris, February 22nd.— C. W. Dalf, Glanville's Wootton, Dorset, 12th March, 1869.

Early appearance of Eupithecia.—E. fraxinata; on the 17th January a friend brought me a fine φ fresh from the pupa. E. helveticaria; this species appeared in my breeding cage on January 19th. E. denotata; a fine φ appeared February 4th. E. albipunctata; Manchester may be fairly added to the list of localities for this species, an example having appeared on February 28th, from larvæ collected here last autumn.—Chas. Campbell. 14, Blackburn Street, Hulme, Manchester, 11th March, 1869.

Nepticula minusculella at Cheshunt.—On February 22nd I bred a specimen of Nepticula minusculella, from larvæ in pear leaves collected at Cheshunt last August.—W. C. Boyp, Cheshunt, Herts, March, 1869.

[This species must therefore now be added to the British list. Previously having seen only captured specimens, I was cautious on the subject—see Nat. Hist. Tincina, vii, p. 166.—H. T. S.]

Notes on the Lepidoptera inhabiting Rosshire. - Wishing to learn something of the Insect Fauna of the North of Scotland, I, in the beginning of June, 1868, transferred my Lares and Penates (to wit, nets, setting-boards, et id genus omne) to the picturesque parish of Contin, in the county of Ross; and pitched my tent beside the birch-clad rock of Tor Achilty. Before beginning an enumeration of the Lepidoptera observed, a few words on the character of the country may not be out of place, besides being of use to any future explorer. Taking the picturesque little Loch Achilty as a convenient centre, we find a series of rocky heath-covered hills sloping down on all sides to the lake. These hills are nearly to their summits clad with birch forests, but one, from its numerous oak trees, is appropriately named "the rock of the oaks," (Craig Darroch). To the north and south of the Loch run the rivers Conan and Blackwater, bordered by hills of the same nature as those surrounding the Lake. Nine miles to the north-east of Achilty lies the great domeshaped mass of Ben Wyvis ("the extraordinary Mountain"), famed for being one of the few mountains in Britain that always possesses snow. Altogether the scenery is among the best in Scotland, and good scenery I think enhances considerably the pleasures of collecting. Few things are more enjoyable than the "pipe" while watching the hills getting bluer and bluer in the twilight, and the shades of night slowly enveloping the sugared trees, while one thinks of all the rare beauties fast flying to the treacherous feast. The soil of the district is very sandy and rocky, and the climate dry and noted for its remarkable mildness. I was told by a French botanical friend that the place greatly resembled in appearance the Forest of Fontainebleau, a fact, which taken in connection with the occurrence of certain insects here and with the character that Mr. Stainton gives of Fontainebleau, is rather curious. What Mr. Stainton remarks in the "Annual" for 1868, is to the following effect: "that Fontainebleau, with its sandy soil and numerous rocks, is a particularly warm locality and that some insects occur here which are not again met with till the collector has proceeded 250 miles further towards the south." The insects I refer to are Acronycta megacephala, Macaria notata, &c., which seem to be found from the south nearly to the north of England, appearing again here in the north of Scotland, without (as far as our knowledge extends) inhabiting any intermediate localities. In connection with the appearance here of southern species, I may mention that I found, among plants, Rhamnus frangula, hitherto a doubtful native of Scotland (recorded from Ayrshire), and Fumaria hibernica, not I believe recorded from any locality in Britain north of Derbyshire; and among land Mollusca, Helix aculeata, Zonites excavatus, Pupa ringens, &c., none of which were supposed to occur so far north in Britain.

Sugar proved very successful, especially in June (Mr. T. Blackburn's untiring energy contributing greatly to this desirable result, while his pleasant company enlivened the time when waiting for the darkness that would not come). Altogether 59 species of Noctuina visited the sugar, as well as 13 other species of Lepidoptera (including Orgyia antiqua entangled by the wings). I also noticed a squirrel one day paying attention to the old sugar. Honeysuckle and heather blossom produced many species, and the burrows of the goat moth a few.

In the following list I have mentioned every species (to the end of the Tortricina), as few, if any, of the insects of this northern county have been recorded previously: the Diurni and Nocturni are few in number as compared with succeeding groups.

282 [April,

About half of the Scottish Geometra are represented. Both of the 2 Scottish Drepanula. One-third of the British Pseudo-Bombyces. Half of the Scottish species of Noctua, and but a small portion of the remaining groups. It must be remembered, however, that I was but a short time in the district, and that the country worked was all of one character. The numbers of species in the different groups are:—

Diurni, 13. Drepanulæ, 2. Deltoides, 1. Crambites, 7. Nocturni, 19. Pseudo-Bombyces, 9. Pyralides, 6. Tortrices, 39. Geometræ, 72. Noctuæ, 81.

Pieris brassicæ. P. rapæ. P. napi.

Argynnis Euphrosyne, June 5th; A. Selene, both common; Euphrosyne is by no means a common species in Scotland, whilst Selene is perhaps one of the com. monest of those "not common everywhere." Vanessa urtica, 2nd brood July 9th. Pyrameis Atalanta, not very common. Pyrameis cardui, June 22nd; hybernated larvæ, in July. Satyrus Semele, one worn specimen, August 17th. S. Janira, June 23rd, very abundant. Chortobius Davus, June 20th (the northern form, C. Tuphon), C. Pamphilus June 3rd. Lycana Alexis, June 16th. Thanaos Tages, June 5th, not common, a rare butterfly in Scotland. Smerinthus populi, June 9th; larvæ in August, on aspen. Sphinx convolvuli, a dead specimen brought to me in September; the ova-it was a female-were well developed. Macroglossa stellatarum, larvæ on Galium verum. Cossus ligniperda, larvæ in birch trees. The sap exuding from the burrows, as usual, was a great source of enjoyment to many insects, five or six species of Lepidoptera being among the number. The toads (whose names were legion) seemed to be aware of the insect-alluring powers of the infested trees, and held nocturnal revels among them. One tree, which I passed almost every night in returning from sugaring, had seldom fewer than four of these brighteyed monsters in attendance. Hepialus hectus, June 30th; scarce. H. sylvinus, June 19th; H. velleda, June 19th (H. humuli, which I especially wished to find, thinking there might be some tendency to variation, did not turn up).

Lithosia mesomella, June 22nd, not common. The half-grown larvæ in October. The food of the caterpillar seems not to be entirely confined to cryptogamic plants, as I found one on the common heather (Calluna), the leaves of which it devoured with a good appetite, not only while in my possession, but when in the hands of Mr. Buckler, to whose tender care it was consigned. Euthemonia russula, June 4th; larva in October. Chelonia plantaginis, June 20th; C. caja, June 28th. On July 26th saw some larvæ of C. caja about the third of an inch long, feeding on black current leaves-rather a strange selection of the mother moth! Arctia fuliginosa, June 19th, common. Larvæ common in September. A. menthastri, June 8th (at Perth, May 2nd); larvæ full-fed August 16th. Orgyia fascelina, larvæ not common June and October. O. antiqua, August 15th, very common. From the number of batches of infertile eggs to be seen on the birch trees, many females seem to die unimpregnated; yet their power of attracting the opposite sex is great. On various occasions I placed a female on a plant just outside of the window, and in less than half-an-hour one or more males would appear and hunt about till the object of attraction was discovered. At other times not a male would be seen near the house-probably not nearer than about 200 yards off. One curious thing to be noticed in regard to the power of attraction is, that it was apparently stronger at a distance than quite close to the female, for the males seemed to find their way easily to the window, but when there it took them some little time and trouble to find the exact situation of the lady. Demas coryli, larvæ not scarce. Pæcilocampa populi, larvæ. Bombyx rubi, June 9th. Bombyx callunæ, larvæ common, but no moths seen. Saturnia carpini, imago and larvæ. Rumia cratægata, Venilia maculata, June 4th. Metrocampa margaritata, June 12th; Ellopia fasciaria, June 3rd. Odontopera bidentata, June 3rd. Selenia lunaria,\* larvæ: Crocallis elinguaria, July 31st. Amphydasis betularia, June 6th. Cleora lichenaria, June 22nd. Boarmia repandata, June 4th. Gnophos obscurata, Aug. 4th. Geometra papilionaria, June 29th. Ephyra pendularia, June 4th. Acidalia bisetata, July 7th. A. fumata, June 5th, A. aversata, July 1st. Cabera pusaria June 3rd†. Macaria notata, June 3rd. M. liturata, June 5th. Fidonia atomaria, June 2nd. + F. piniaria, June 3rd; + F. pinetaria, June 26th; everywhere in the district, among Vaccinium myrtillus Aspilates strigillaria, not common. Lomaspilis marginata, June 6th. Cheimatobia boreata, a few larvæ. Oporobia dilutata, Oct. 12th. Larentia didymata, July 22nd. L. casiata, June 8th. L. salicata, June 20th, Ben Wyvis. L. olivata, July 28th. L. pectinitaria June 4th. Emmelesia alchemillata, June 11th. E. ericetata, not common, July 27th. E. blandiata, rare, June 27th. Eupithecia nanata, June 3rd. Eupithecia succenturiata, E. absynthiata, July 9th. E. tenuiata, July 17th, not common. E. sobrinata, July 31st. Eupithecia satyrata, E. pumilata, June 5th, very abundant in one place. E. rectangulata, June 29th. Therajuniperata, September. T. simulata, July 1st. T. variata, June 4th.+ Hypsipetes impluviata, June 6th. + H. elutata, July 10th. Melanthia ocellata, June 3rd. Melanippe tristata, June 3rd. † M. subtristata, June 16th. M. montanata, June. † M. fluctuata, July 2nd, brood; Coremia munitata, June 11th, not uncommon in the garden; rare on the hill sides. C. ferrugata, June 2nd. † Camptogramma bilineata, June 26th. Phibalapteryx lignata, July 16th. Cidaria psittacata, September 23rd. C. miata, October 2nd. C. corylata (larvæ), and var. albo-crenata, June 3rd. C. russata, June 13th. C. immanata, July 3rd. C. prunata, July 14th. C. testata, July 31st. C. fulvata, July 1st. C. dotata, July 2nd. Eubolia mensuraria, July 18th, rare. E. palumbaria, June 3rd, very common. Anaitis plagiata, June 26th. Chesias spartiata, September 26th. C. obliquaria, not common, June 18th. Platypteryx lacertula, June 6th, larvæ on birch. P. falcula, June 3rd, larvæ on birch. Dicranura furcula, larvæ not common. D. vinula, larvæ common. Pygæra bucephala, June 6th, larvæ. Clostera reclusa, larvæ on aspen and sallow. Notodonta camelina, larvæ. N. dictæa, larvæ on aspen. N. dictæoides, larvæ on birch. N. dromedarius, July 7th, larvæ on birch. Ptilodontis palpina, larvæ. atira batis, July 6th. Cymatophora duplaris, July 17th. C. or, June 8th, larvæ on aspen. C. flavicornis, larvæ. Acronycta psi, July 18th. A. leporina, June 6th, larvæ on birch. A. megacephala, June 12th, larvæ on aspen; apparently the only Scottish locality for this species. A. ligustri, June 9th, larvæ and pupæ from ash. A. rumicis, June 5th, larvæ. A. menyanthidis, June 5th, larvæ on Myrica. A. myricæ. July 7th, one at sugar, in good condition-surely very late? Leucania pallens, August 5th. L. lithargyria, June 20th. Hydræcia nictitans, August 16th. H.

<sup>\*</sup> There is no doubt of the species, as the image has emerged (under the influence of artificial heat).

-F. B. W.

<sup>+</sup> Not the earliest appearance; examples seen in Perthshire some time previously.-F. B. W.

micacea, August 11th. At light, Xylophasia rurea, June 6th. X. polyodon, June 23rd. Mamestra anceps, June 27th. Apamea basilinea, June 8th. A. gemina, June 15th; A. unanimis, June 12th. Caradrina cubicularis, June 22nd,\* and September 22nd, 2nd brood. Rusina tenebrosa, June 8th. Agrotis suffusa, June 11th. A. exclamationis, June 10th. A. aquilina, August 10th. A. porphyrea, June 19th, larvæ. Triphæna fimbria, August 3rd. T. orbona, June 29th. T. pronuba, July 27th. Noctua augur, June 23rd. N. plecta, June 3rd, and larvæ. N. c-nigrum, June 17th. N. triangulum, June 24th. N. brunnea, June 12th. N. festiva, June 20th. N. conflua, July 21st. A moth that puzzled me is, Mr. Doubleday kindly told me, apparently a curious variety or aberration of this species. N. Dahlii, July 21st. N. rubi, June 24th. N. umbrosa, July 16th. N. baja, July 27th. N. neglecta, August 1st. N. xanthographa, July 27th; altogether the genus Noctua was well represented. Orthosia suspecta, July 25th. O. macilenta, September 25th. Anchocelis rufina, September 22nd. A. litura, September 22nd. Cerastis vaccinii, September 25th. Xanthia ferruginea, September 22nd. Euperia fulvago, July 31st. Dianthæcia capsincola, larvæ in capsules of Lychnis vespertina. Not more than one or two of this plant were to be found in the neighbourhood, and yet they had been found out by the Dianthecia. Epunda nigra, September 22nd, males scarce, females common. Miselia oxyacantha, October 2nd. Agriopis aprilina, Phlogophora meticulosa, June 10th. Euplevia lucipara, June 8th. Aplecta occulta, June 22nd. Aplecta tincta, June 16th. Hadena adusta, June 8th. H. protea, August 7th. H. dentina, June 9th. H. oleracea, June 8th, and larvæ. H. pisi, June 23rd. H. thalassina, June 4th, and larvæ. H. contigua, June 12th. H. rectilinea, June 11th. Cloantha solidaginis, August 12th. Calocampa vetusta, September 22nd, larvæ. C. exoleta, September 18th. Cucullia umbratica, June 24th. Anarta myrtilli, June 11th, larvæ. Habrostola urticæ, June 23rd. Plusia chrysitis, July 6th. P. festucæ, P. V-aureum, June 11th. P. gamma, June 9th; August 7th, 2nd brood. P. interrogationis, July 9th. Amphipyra tragopogonis, August 10th. Mania typica, July 7th. Stilbia anomala, August 5th. Phytometra anea, June 5th. Hypena proboscidalis, June 12th. Pyrausta purpuralis, Pyrausta ostrinalis, June 3rd. Botys fuscalis, June 2nd. Pionea forficalis, June 29th. Scopula lutealis, Scoparia ambigualis, S. atomalis. Crambus pinetellus, July 8th. C. Warringtonellus, scarce, or more probably overlooked. C. tristellus, July 10th. C. culmellus, C. pratellus, June 2nd. Phycis abietella, July, one bred. Melia sociella, July 8th. Halias prasinana, June 8th. Sarrothripa revayana, July 31st, one beaten out of an oak. Tortrix corylana, common at sugar. T. ministrana, June 3rd. T. adjunctana, one or two specimens, July 10th. Leptogramma Treveriana, a few near aspens, August 16th. Peronea mixtana, P. variegana, August 7th. P. maccana, September 17th. P. ferrugana, August 10th. Teras caudana, T. contaminana, Penthina picana, June 26th. P. betuletana, July 18th. P. prælongana, June 5th. P. pruniana, P. ochromelana, June 3rd. P. sauciana, Pardia tripunctana, June 8th. Sericoris micana, Mixodia Schulziana, M. palustrana, June 26th; no fir trees within a mile or two of this reputed-fir-haunting species' localities. Orthotenia antiquana, Cnephasia musculana, June 3rd. Phoxopteryx unguicana, June 2nd. P. uncana, P. myrtillana, P. ramana, Hypermecia angustana,

<sup>\*</sup> May 9th, at Perth.

Padisca solandriana, July 18th. Ephippiphore bimaculana, August 15th. Coccya ustomaculana, Dicrorampha plumbagana, June 3rd. Grapholita ulicetana. G. Scopoliana, Xylopoda Fabriciana, Eupacilia ciliella, beginning of June, end of June, and end of July, among heather. I sent a specimen of this to Mr. Barrett,\* as E. subroscana, as he had expressed a desire to see the heath-frequenting species recorded under this name (vide E. M. M., vol. v, p. 246). He, however, kindly told me that it was the above species. The few specimens I took vary much. The true subroscana does not appear to be a northern or heath-frequenting species. Argyrolepia subbaumanniana, Aphelia pratana.—F. Buchanan White, Perth, March, 1869.

## Rebiew.

Bullettino della Società Entomologica Italiana; anno primo; Firenze, 1869.

We announced some time since that, through the exertions of Mr. A. H. Haliday, long resident at Lucca, combined with those of leading Italian Entomologists, an Entomological Society had been established in Italy; and we recently had the pleasure of receiving the first part of their Bulletin, which is most creditable. It is occupied, as it should be, chiefly by articles on Italian insects, by various authors, among whom we see the well-known names of Rondani, Piccioli, and Ghiliani, with others not yet so familiar. A coloured plate is devoted to a Hymenopteron described by Piccioli as Astata Costa (is not this a \$\frac{7}{2}\$ of A. oculata, Jurine?). Four parts, of 80 pages each, will be published annually. We have private information that the second will contain a paper by Mr. Haliday, on a new species of Cassida, collected by him in Sicily, which he proposes to name C. suada, accompanied by figures of the larva; it frequents Suada fruticosa.

The establishment of this Society institutes a new era in Italian Entomology. Hitherto the numerous valuable memoirs by the workers in that, by nature, much-favoured land, have been almost useless to most students, through having been published in some one or other of the Transactions of the Academies devoted to general science, and which exist here in very few libraries; the Bulletin of the new society will, on the contrary, gain a wide circulation.

Mr. Wilson Saunders, of Hillfield, Reigate, has, with his usual generosity, undertaken to act as agent of the Society in England, and gentlemen desirous of becoming members should communicate with him, or with Mr. Haliday, Villa Pisani, Lucca. The annual subscription is ten shillings in England, for which the Bulletin will be forwarded free.

Entomological Society of London; 15th February, 1869.—H. W. Bates, Esq., F.Z.S., President, in the Chair.

Dr. Wynne Foot, of Dublin, was elected a Subscriber.

Mr. Butler exhibited a living locust belonging to the genus Conocephalus, which had been found in the beginning of the month, on board a vessel arrived from the West Coast of Africa. According to the captain's account, a swarm of these insects had alighted upon the vessel, and several had arrived alive in the Thames; the specimen exhibited had not eaten anything since being in Mr. Butler's possession.

Professor Westwood exhibited two Nycteribidæ, from Ceylon, parasiticupon bats, a Strebla and a Nycteribia. These insects were prepared as microscopic objects, by first being squeezed between the leaves of a book, afterwards placed upon the slide, and hot canada-balsam poured upon them.

Mr. Barrett has inadvertently stated in his interesting notice of certain species of Eupæcilia, that I took this species near Kirkwall. It should have been near Dingwall.—F. B. W.

Mr. Smith exhibited a collection of honey-bees (Apis) from all parts of the world, together with pieces of the comb of several species. Being engaged on the preparation of a supplement to his monograph of the genus published a few years since in the Annals and Magazine of Natural History, he solicited the assistance of any gentleman who possessed specimens of exotic honey-bees. The species exhibited were A. mellifica; A. liquistica in all sexes; A. fasciata in all sexes (considered by Gerstäcker as only a form of liquistica, but, in Mr. Smith's opinion, quite distinct); A. indica, male and worker from Calcutta; A. nigrocineta (according to Gerstäcker, only a var. of indica); A. florollis, the smallest species (worker—bloadu of Smith); A. darsalis, the largest species (testacea, Smith var.); all forms of a species from the Cape, which might possibly be only liquistica; and a queen from Japan, sent by Mr. Lewis, which was probably only mellifica.

Mr. Druce exhibited a collection of butterflies from the Chontales mines, Nicaragua, formed by Mr. Belt. The President made some remarks on this collection, and also on the beetles collected by Mr. Belt at the same place; the latter were numerous and fine, which was to be accounted for by the wood-outting operations connected with the mines in the vicinity.

Mr. E. T. Higgins communicated a description of a new genus and species of *Prionidæ* from the mouth of the Niger. He called it *Omnatomenus sericatus*.

A vote, expressing the sympathy and condolence of the Society with the Rev. T. A. Marshell, who had recently lost the whole of his collections and library through the foundering of the vessel which was conveying them from Milford to Barnstaple, was unanimously passed.

1st March, 1869 .- H. W. Bates, Esq., F.Z.S., President, in the Chair.

Charles Horne, Esq., of Upper Norwood, was elected a Member.

Mr. Bond exhibited examples of Heliothis armigera, from the Isle of Wight, Java, and Australia, this cosmopolitan species showing no appreciable local conditions.

Mr. McLachlan exhibited three males of Dilar Hornei, (described by him in the March No. of this Magazine) from N.W. India. Mr. Horne, in answer to a query respecting its habits, said the insect occurred among grass on damp hill-sides.

Mr. W. C. Boyd exhibited dwarf examples of Vanessa urtice, Pygæra bucephala, &c., &c., bred during the hot season of 1868.

Mr. Horne exhibited a substitute for cork, useful in cases when the latter be not procurable; it was the inner bark of the Indian Pinus longifolia, which separated into large sheets, and was tolerably soft.

Dr. Wallace exhibited a number of cocoons of Bombyx Yama-Mai, together with the moths; he had bred between forty and fifty in 1868. Also B. Pernyi, from China, on which he hoped to be able to make experiments as to its possible utility as a silk-producer. Further, he exhibited a specimen of Saturnia pyretorum, which he had reared from a parcel of cocoons given to him by Dr. Hooker as those of the insect producing the silk-worm gut in China.

Mr. Weir exhibited a number of larvæ of Tipulæ from Blackheath, where many acres of ground were so greatly infested that there appeared to be more grubs than earth, and the birds in the neighbourhood did not diminish their numbers. Mr. Bond said he had once seen four hundred of these larvæ taken from the crop of a pheasant.

Professor Westwood mentioned that he had seen, last month, a luminous larva of the glow-worm, this being remarkably early.

Mr. C. O. Waterhouse read a paper "On a new genus and some species of Lucanidae."

Mr. Weir read a paper "On insects and insectivorous birds, particularly in the relation between colour and edibility of Lepidopterous larvæ."

Mr. Butler read a paper "On some Caterpillars, &c., which are unpalatable to Lizards, Frogs, and Spiders."

These two papers went to prove that the larva of Abrazas grossulariata (among others) was extremely distasteful both to birds and reptiles. A long discussion ensued, in which the President, and Messrs. A. R. Wallace, Horne, McLachlan, &c., and Dr. Wallace, took part.

NOTES ON CICINDELIDÆ FROM TROPICAL AMERICA, WITH DESCRIP-TIONS OF FOUR NEW SPECIES (GEN. ODONTOCHEILA AND PSEUDOXYCHEILA).

BY H. W. BATES, F.Z.S., PRES. ENT. SOC.

The Cicindelidæ of the wooded plains of Equatorial America belong chiefly to the genera Odontocheila, Tetracha, and Ctenostoma; the true Cicindelæ being there few in number, and not remarkable for size or beauty. This accords with the local conditions of the country, viz., wide plains, uniformly covered with lofty forest and traversed by immense rivers fringed with sandy beaches. The Ctenostomæ are exclusively arboreal insects, searching for prey along the slender branches of trees; the Odontocheilæ are shade-lovers, running along the pathways of the forest and occasionally flying to the bushes on either side; the Tetrachæ live on sandy shores, burrowing deep in the light soil, and coming forth only at night. The Cicindelæ proper are creatures of the sunshine, and abound in species and individuals only in warm countries, where there is a varied surface, not too much overshadowed with forest. It is on the sandy beaches of rivers that the few members of the genus Cicindela inhabiting the Amazons region are found; these tracts occupy a large portion of the surface of the country, at least in the dry season, but the uniformity of the conditions they offer is not favourable to the multiplication of forms. Of Cicindela only 7 species are found in the Amazon region; of Tetracha, 16; of Ctenostoma, 12; and of Odontocheila, 21; two Iresiæ and one Aniara complete the fauna in this department.

The Odontocheilæ are distinguished structurally from Civindela only by the advanced and strongly-toothed labrum and the grooved tarsal joints; but their general appearance, or facies, is very different; they are of elongate, cylindrical form, generally roughly sculptured and of dark bronzed hues. Some of the most beautiful (as O. Batesii) are found only on the margins of brooks in the deep forest, and are rare and local; others swarm in incredible numbers, like house-flies in Autumn, in dry paths near villages. The species change in a singular manner from district to district; closely-allied but constant forms representing each other in different areas.

The following descriptions comprise a few Odontocheilæ from the Amazons which have not hitherto been published, and I have added some synonymical notes.

Odontochetla rubefacta, n. sp. O. cayennensi (F.) simillima, differt autem antennarum articulis quatuor basalibus pedibusque rufis. Cylindrica, capite thoraceque suprà creberrime subtiliter punctato-rugosis, 288 [May

rubro-cupreis, lateribus viridi-æneis; capite inter oculos strigoso; elytris ut in O. cayennensi grosse creberrimeque punctatis, fusco-cupreis, lateribus viridi-æneis et cupreis, macula alba unica marginali; labro rufo; pedibus rufis, tibiis posticis pallidioribus, tarsis anticis læte violaceis; prothorace subtus nigro-cyaneo, pectore abdomineque piceo-violaceis, hoc apice pallidiori.

Long. 7—8 lin. 3 2.

This species belongs to the cayennensis group of the genus,—having the thorax rectilinear and the surface of the elytra even,—but differs from all its allies by the fine ruddy-copper hue of its head and thorax and the four red basal joints of the antennæ. In the colour of its legs it does not differ from O. erythropus, Chaud.; the breast, however, and abdomen except towards its apex, are of a pitchy-violet colour, instead of red, as in that species.

From Yunmaguas and other places on the banks of the Huallaga, Upper Amazons; taken first by M. Barraquin, and afterwards by Mr. E. Bartlett. It appears to represent in that district the O. cayennensis of Guiana.

#### ODONTOCHEILA CAYENNENSIS.

Cicindela cayennensis, Fab., Mantissa, 1, 187 (1787).

- id., Oliv., Ent., No. 33, p. 23, pl. 1, f. 2 (1790).
- " bipunctata, Fab., Ent. Syst., i, p. 174 (1792).
- " bipunctata, Dej., sp. gen., i, 22 (1825).
- " bipunctata, Chaud., Bull. Mosc., 1860, p. 51 (separata) (1860).
  - , bipunctata, Gemminger and Harold, Cat. Coleop., i, p. 30.

I give the above synonomy to indicate the confusion that has crept into the nomenclature of this group, owing to Fabricius having given two names to one and the same species. He first described *C. cayennensis* in his Mantissa, and afterwards re-named Olivier's figure of the same species, or rather misquoted Olivier as describing a "Cicindela bipunctata," this latter author having done nothing of the kind, but described and figured a species as C. cayennensis of Fabricius, which appears from the description really to be that species. Dejean described two species under the two Fabrician names, giving the term bipunctata to the one that seems really to be the species described by the older author. The Baron Chaudoir has lately treated both as varieties of one species, unfortunately retaining the erroneous name of bipunctata for it. I think, however, the two Dejeanian species are really distinct; and, in this case, his cayennensis ought to receive a new name.

ODONTOCHEILA OSERYI, Lucas, Voyage de Castelnau, Entom., p. 37 (nec fig. 7, pl. 1, a).

This is a fine and distinct species of the cayennensis group, discovered by the Castelnau expedition in 1846, and recently obtained in considerable numbers at Pebas, Upper Amazons, by Mr. J. Hauxwell. The figure given by Lucas is totally opposed to his description with regard to colours, and seems to have been taken from O. rubefacta, mihi; O. Oseryi has the legs of a rich dark blue, with the sole exception of the hindmost tibiæ, which are saffron-yellow.

Odontochella trochanterica, n. sp. O. margineguttatæ (Dej.) forma et colore similis, differt autem trochanteribus anoque testaceo-albis. Cylindrica, thoracis lateribus rectis: supra fusco-cuprea, thoracis elytrorumque lateribus cyaneis, horum marginibus albo-tri-guttatis; subtus saturate cærulea, trochanteribus anoque albo-testaceis, pedibus violaceis, genubus tibiisque posticis obscure rufo-testaceis, labro antice rufo-testaceo.

Long.  $5\frac{1}{2}$  lin. 3 2.

This was a common species in dark forest pathways at Pará, flying and running on the sandy ground, and over bushes. The description is taken from 8 examples perfectly agreeing with each other.

Odontocheila rugatula, n. sp. O. margineguttatæ affinis, sed minor. Cylindrica, nigro-cuprea, pedibus cyaneis, trochanteribus femoribusque basi rufo-piceis; labro obscuro, marginibus late testaceis; thorace angusto, medio apicem versus paulo rotundato, suprà subtilissime transversim strigoso, margine postico læte cupreo; elytris marginibus cyaneis, albo-tripunctatis, puncto mediano magno, triangulari; suprà vix inæqualibus, creberrime punctato-rugosis, rugis suturam versùs longioribus magisque distinctis; subtus omnino cyanea. Long. 4½—5 lin. 3 9.

Allied to O. margineguttata, but smaller, the elytra much shorter in proportion, the median marginal spot much larger, surface blacker in colour and more distinctly rugulose. It resembles also O. eximia (Lucas) in size and general colour, but differs in the finer punctuation and less uneven surface of the elytra. The colour is a blackish bronze, with the sides of the elytra gradually shading into brassy-green, then into blue, and finally, on the margin, into violet. As in O. margineguttata, the abdomen is wholly dark blue; the legs are also of this colour, with the exception of the trochanters and extreme base of the femora, which are dark pitchy-red or brown.

Common at Obydos, on the northern side of the Lower Amazons; all the specimens examined agree in the characters above given. I did not find the species on the Upper Amazons or at Pará.

Many of the new species of *Odontocheila* obtained by me have been described by the Baron de Chaudoir, in the Bulletin d. l. Soc. Imp. des Nat. de Moscou, 1860, but the following complete list will be useful in comparing the productions of the Amazons region in this genus with those of other parts of Tropical America.

- 1. O. Oseryi, Lucas; Pebas, Upper Amazons.
- 2. O. rubefacta, Bates; R. Huallaga.
- 3. O. femoralis, Chaudoir; St. Paulo, Upper Amazons.
- 4. O. ocreata, Reiche; R. Tapajos.
- 5. O. erythropus, Chaud. ; Ega.
- 6. O. rufipes, Dejean; Parà.
- 7. O. postica, Chaudoir; St. Paulo, Upper Amazons.
- 8. O. Trilbyana, Thomson; Upper Amazons, common.
- 9. O. distinguenda, Chaudoir; Pará.
- 10. O. trochanterica, Bates; Pará.
- 11. O. margineguttata, Dej.; Ega.
- 12. O. confusa, Dej.; common throughout the Amazons region.
- 13. O. rugatula, Bates; Obydos, Lower Amazons.
- 14. O. eximia, Lucas (rhytiptera, Chaud.); St. Paulo, Upper Amazons.
- 15. O. cyanella, Chaudoir; Ega, rare.
- 16. O. amabilis, Chaudoir; Ega, rare.
- 17. O. Batesii, Chaudoir; St. Paulo, Amazons.
- O. Castelnaui, Lucas (=O. Batesii, local var.); Pebas, Upper Amazons.
- 19. O. Lacordairei, Gory; general throughout the Amazons region.
- O. chrysis, Fab.; St. Paulo, Amazons (agreeing precisely with Surinam specimens).
- O. egregia, Chaud.; Amazons, from Obydos westward; in cacao groves.

PSEUDOXYCHEILA TARSALIS, n. sp. Saturate-cærulea, elytris plaga magna atro-velutina, maculam parvam transversam pallide-ochraceam includenti ornatis; (3) apice prolongatis, suturá in dentem latum recurvum productá; tarsorum intermediorum et posticorum articulis basalibus duobus paulo incrassatis, subtus nudis, grosse punctatis.

Long. 8 lin. 3.

Differs from the allied species in its rich dark indigo-blue colour, and the pale hue of the elytral spot. In the 3, also, the apex of the elytra at the suture is much prolonged, and forms a broadish tooth curved a little outwards. The underside is rich dark blue, and the legs are shining black. A remarkable feature is the perceptible thicken-

1869.] 291

ing of the first two joints of the middle and hind tarsi, which, instead of being clothed with bristles beneath, are naked, and marked with several large punctures. The elytra have a few raised points on the shoulders, and shallow punctures near the apex; the apical part, as in the allied species, is glossy. Costa Rica, Central America; taken by the collectors of Mr. O. Salvin.

40, Bartholomew Road, Kentish Town, N.W. March, 1869.

NOTES ON THE BRITISH SPECIES OF SCOPARIA (LEPIDOPTERA).

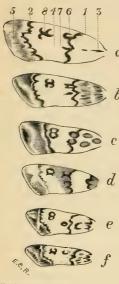
BY H. GUARD KNAGGS, M.D., F.L.S.

The great stumbling-block to the study of the Scopariæ is undoubtedly the difficulty experienced in procuring decent specimens, owing to an unfortunate tendency many of them have of quickly divesting themselves of characteristic markings when pill-boxed and conveyed in the usual fashion. To prevent this disappointment, the necessity of killing, pinning, and even setting the captures on the spot, is advocated; and it cannot be too strongly urged that none but good examples should be preserved, for of all things a miserable array of irrecognisable objects is calculated to bewilder and repel those who might otherwise take an interest in the genus. In the present sketch an attempt will be made to show that the various species comprised in this group of little Pyrales are by no means so difficult of separation as is generally supposed; and it is hoped that, when collectors begin to see their way to a knowledge of their distinctive characters, they will then regard them with a less unfavourable eve, and consequently devote a fairer share of attention to them than they have yet received at the hands of British Entomologists.

Of one thing there can be no doubt, namely, that the bulk of European Scopariæ affect high altitudes and boreal latitudes, and it is therefore but natural to expect that our mountains and northern districts will yield many species as yet unsuspected to occur here—some, perhaps, altogether new.

The fore-wing of a *Scoparia* is divided into three tolerably equal areas by two lines, termed "first" (cut A, 1) and "second" (cut A, 2), the former being nearest the base of the wing: these areas may be respectively designated basal (cut A, 3), medial (cut A, 4), and apical (cut A, 5). It is in the medial area that the most important characters are found, but the other two render us occasional assistance in the determination of closely allied species.

In the medial area are contained three stigmata (similar to those observable in the  $Noctu\varpi$ ), which are here correspondingly spoken of as the orbicular (cut A, 6), claviform (cut A, 7), and reniform (cut A, 8); and we shall find that the disposition of the two former in relation to the first line will enable us readily to separate the species into groups; thus:—



I. Both orbicular and claviform stigmata attached to first line (cuts A and C).

II. Orbicular attached, claviform detached (cuts B and E).

III. Neither orbicular nor claviform attached (Plate fig. 16).

IV. Orbicular detached, claviform attached (cut F).

In the next place the form of these two stigmata themselves will help us to a further subdivision; for instance, in group I.

a. Orbicular and claviform both linear (pl. fig. 1).

b. Orbicular and claviform both open (cut C).

c. Orbicular open, or partially so, claviform dash-like (cut A).

d. Orbicular and claviform indistinct, owing to shading beyond first line (pl. fig. 11).

Similarly group II.

e. Claviform dot-like (cut E).

f. Claviform dash-like (cut B).

Again in group III.

g. Both orbicular and claviform dot-like (pl. fig. 9).\*

h. Orbicular open, claviform dot-like (pl. fig. 15).

i. Claviform dash-like (pl. fig. 16).

And again in group IV.

k. Orbicular dot-like (pl. fig. 18).

1. Orbicular open (cut F).

Of these sub-divisions 7 represent single species, viz., I a = pallida.

<sup>\*</sup> This species is misplaced in the plate. The numerous dark scales beyond the first line originally led me to include it in the fourth subdivision—Group I, but I now see that both its stigmata are distinctly detached from the first line,—H. G. K.

- II e = crategella. II f = truncicolella. III g = resinea. III h = murana. III i = gracilalis. IV k = alpina. Four groups yet remain to be separated:—
- Firstly—dubitalis and ingratella, the latter being separable from the former by its larger size, broader fore-wing, and by the almost entire absence of black markings.
- Secondly—5 species, of which ambigualis is the type, namely, that species cembræ, basistrigalis, Zelleri, and atomalis. Cembræ is pretty easily distinguished from ambigualis by its fuscous tints and indistinct markings; basistrigalis by the first line being produced along the costa, towards the base of the wing; Zelleri by its large size; atomalis by its small size.
- Thirdly—3 species, of which mercurella is the type. From the latter ulmella is at once separated by the form of its renal stigma, which is as in group I b (cut C); pheoleuca by the whiteness of its ground colour and pretty rounded fore-wings.
- Fourthly—2 species, lineola and angustea, the latter having very narrow fore-wings, and otherwise differing much from the former.

For the rest the reader is referred to the plate.

#### EXPLANATION OF PLATE.

fig. 1.	Scoparia pallida, Stp.	Fig. 11.	Scoparia mercurella, Linn.
2.	ingratella, Zell.	12.	ulmella, Dale.
3.	dubitalis, Hüb.	13.	cratægella, Hüb.
4.	cembræ, Haw.	14.	truncicolella, Stainton
5.	ambigualis, Treits.	15.	murana, Curt.
6.	basistrigalis, Knaggs.	16.	gracilalis, Dbld.
7.	Zelleri, Wocke.	17.	lineola, Curt.
8.	atomalis, Dbld.	18.	alpina, Dale.
9.	resinea, Haw.	19.	angustea, Stp.
10.	phæoleuca, Zell.		

#### BRITISH HEMIPTERA: ADDITIONS AND CORRECTIONS.

BY J. W. DOUGLAS AND JOHN SCOTT.

(Concluded from page 268.)

CORIXA BOREALIS, n. sp.

Black, shining; pronotum, clavus, and corium finely rastrate; pronotum with 8-9 obscure yellowish lines; all the other yellowish markings obscure.

Q. Head and eyes tawny. Pronotum short, rounded behind, in front with a slight, short keel, disc with 8—9 interrupted or confluent, obscure yellowish lines, the black intervals with a depressed line on each. Elytra—clavus and corium with a few short, whitish hairs. Clavus with obscure, yellowish, transverse lines, 3 or 4 at the base straight, the rest irregular, interrupted, and rarely reaching the inner margin. Corium with transverse, irregular lines, straight at the base, then becoming more and more irregular to the apex, on the inner margin forming a longitudinal row of short streaks, the posterior angle clear black; marginal channel pale livid tawny; membrane-suture very narrow, yellow. Membrane filled with short, curved and twisted yellowish marks, inner margin broadly black. Sternum black; scapules, pleure, and parapleure pale yellow. Legs brown-black; thighs tawny at the base; pale narrow, round-cultrate.

Abdomen tawny-black.

Length 21 lines.

J. Unknown.

Allied to C. Fabricii, Fieb.

Two specimens, received by Mr. Brewer, were captured in Shetland, in 1866, by Mr. E. Smith.

# CORIXA WHITEI, n. sp.

Tawny-black, with obscure yellowish markings, shining. Pronotum, clavus, and corium finely rastrate. Pronotum with 7—8 scarcely perceptible yellowish lines, the middle ones interrupted; clavus and corium with indistinct, fine, yellowish lines, on the former straight, much shortened inwardly, on the latter short and sinuous; marginal channel pale. Sternum entirely pale ochreous.

Head—Crown brown, posteriorly raised into a sub-acute point, on each side of the elevation a row of 4 or 5 punctures; face yellowish.

Thorax—Pronotum in front with a short keel; disc with 7—8 obscure yellowish lines, straight, except 2 or 3 in the middle, which are interrupted by the junction of the narrow, incised, intervening black lines. Elytra—clavus with fine, distant, oblique, straight yellowish lines, all visible on the outer margin, but so much abbreviated inwardly that the disc appears black. Corium with short, sinuous, interrupted, transverse yellowish lines, sometimes connected by longitudinal streaks; inner posterior angle wholly black; marginal channel pale; membrane-suture distinct, yellowish. Membrane with very fine, short, hieroglyphic markings. Sternum, scapula, pleura, and parapleura pale ochreous. Legs tawny-brown; thighs paler at the base; 1st pair, palæ, \$?, narrow, roundly cultrate; 2nd pair, tibiæ black at the apex; 3rd pair, cilia of tarsi dark brown.

Abdomen fuscous, ochraceous at the sides.

Length 21 lines.

Intermediate between C. Fabricii and C. mæsta. A single 2 taken by Dr. F. Buchanan White, at Rannoch, in 1867.

The next two species belong to the section of the genus in which the *pronotum* has a long middle keel—not hitherto represented in our collections by British examples.

### CORIXA SHARPI, n. sp.

Black-brown, shining. Pronotum, clavus, and corium, at the base, finely rastrate; pronotum carinate nearly throughout the length, with 10—12 yellow transverse lines, the posterior ones obliterated. Elytra with very fine, short, yellowish lines in longitudinal series.

#### Q. Head above, black-brown, face yellow.

Thorax—Pronotum long, rounded behind, disc with a slight middle keel nearly throughout the whole length, and 10—12 narrow, transverse, yellow lines, several of the posterior ones obliterated by the dark ground colour. Elytra—Clavus and corium with many long, distant hairs; clavus with fine, hieroglyphic, yellow markings, straight at the base; corium with very fine, twisted, transverse, yellowish lines, broken into longitudinal series, of which 4 are visible at the widest part; marginal channel dull, pale brownish-yellow; membrane-suture broadly clear. Membrane with very fine, short, twisted, yellowish lines, on the inner margin especially disposed in a parallel series. Sternum black; scapula, pleura, and parapleurae pale yellowish outwardly. Legs brownish; thighs paler at the base; palæ long, narrow, cultrate; cilia of the 3rd pair of tarsi black.

Abdomen brown, paler at the sides, basal segments black. Length 4 lines.

Male unknown.

Of this fine, distinct species, a single  $\circ$ , captured by Dr. Sharp, and presented by him to us, is the only example known. Allied to *C. carinata*, Sahlb.

# CORIXA INTRICATA, n. sp.

Shining, black-brown with ochreous markings, and many fine, light, decumbent hairs. *Pronotum* distinctly rastrate, a middle keel on the anterior half, and 8—9 fine, black, transverse lines, which, except 2 or 3 in the middle, are entire. *Elytra* wholly covered with similar close, fine, irregular, twisted lines, broken by 3 fine longitudinal black lines; *clavus*, and *corium* at its base, very delicately rastrate, marginal channel pale.

Head ochreous, crown brownish, posteriorly raised sub-angularly, on each side of the elevation a short row of close punctures; facial depression wide, ovate, reaching beyond the lower angle of the eyes.

Therax—Pronotum long, with a middle keel extending perceptibly on the anterior half, but only indicated posteriorly, and 8—9 transverse, fine black lines straight and entire, except 2 or 3 in the middle, which are abbreviated and confluent. Elytra entirely covered with similar, close, fine, short, angularly twisted, transverse yellow lines. Corium, viewed lengthwise, the fractures of the lines appear as 3 longitudinal, fine, irregular, jagged, black lines; at the apex the transverse lines are more straight and parallel; marginal nerve (next the channel) black. Marginal channel pale yellow, infuscated slightly

at the lower end of the embolium; membrane-suture obliterated by the markings. Membrane covered with longer and more angular yellow lines, less closely in the middle, on the inner margin the lines are straight and parallel; outer margin narrowly black. Sternum, coxe, scapulæ, pleuvæ, and parapleuvæ entirely pale yellow. Legs pale yellow; 1st pair, &, tibiæ thickened to the apex, curved; palæ long, narrow, round-cultrate; \$\varphi\$, tibiæ, not thickened, palæ narrower than in the \$\varphi\$; 2nd pair, end of the thighs, tibiæ, and tarsi brown or blackish; 3rd pair, cilia of the tarsi black.

Abdomen pale ochreous, first 3 segments fuscous-black, posteriorly pale.

Length 31 lines.

Three 3 and one 2 taken by Dr. Power, in Loch Gelly, Fifeshire, August, 1868.

Allied to *C. Germari*, Fieb., which is 4 lines long, has the facial depression extending scarcely beyond the angles of the eyes, the middle of the sternum and the inner side of the scapulæ and pleuræ black, the anterior tibiæ swollen, the hairs of the posterior tibiæ (? tarsi) yellowish, the membrane suture yellowish, &c.

Family 2.—Sigaridæ.

Genus 1.—Sigara, Fab.

Species 2.—Sigara Poweri, n. sp.

Ochreous, with well-defined black-brown markings, dull.

Head ochreous; crown, in the middle, with a large wedge-shaped brown mark, its widest part at the base of the head.

Thorax—Pronotum brown-black, in the middle an ochreous line widened posteriorly into the pale hinder margin, the sides also broadly pale ochreous. Scutellum black. Elytra—clavus black-brown, a small spot posteriorly, and the entire inner margin, ochreous; claval suture narrowly pale. Corium ochreous, at the base a dentate patch, across the middle another, more irregularly dentate, the longest lobe on the inner side, followed by two curved, sublinear spots, all brown-black; marginal channel pale, with two long, dark streaks opposite the large brown patches. Membrane infuscated, gradually darker to the apex. Legs yellow.

Length 1 line.

Very like S. minutissima, but by its general habit, larger bulk, and definite markings, appears to be distinct.

A single specimen was captured by Dr. Power, in the New Forest, in 1866, in company with Agabus brunneus.

Species 3.—SIGARA SCHOLTZI.

SIGARA SCHOLTZI, Fieb., Europ. Hem. 90, 4 (1861).

Pale ochreous with ill-defined fuscous spots, shining.

Head, including the large black eyes, wider than the pronotum; erown in the middle of the posterior margin raised to a point, which is brown; front, on the curve, with 3 brown longitudinal streaks. Thorax—Pronotum in the middle and on the posterior margin pale ochreous, the remainder of the disc fuscous. Scutellum pale, sometimes with an oblique fuscous streak on each side. Elytra delicately punctulate. Clavus fuscous, the base broadly, the inner margin narrowly, and the claval-suture indistinctly, pale ochreous. Corium with 3 long, fuscous, longitudinal streaks, of which the longest is on the posterior inner angle, the other 2 shorter, less distinct, on the middle of the disc, all 3 more or less confluent; anterior margin pale, with a long fuscous streak in the middle, and one before the apex. Membrane pale, fuscous in the middle and inwardly. Legs ochreous, posterior tarsi with brown cilia.

Length rather more than 1 line.

Distinguished from *S. minutissima* especially by its larger size, greater breadth of the head, and lighter colour. Varies according to maturity in the darkness of the markings, very young examples being almost wholly pale.

A few examples were taken by Dr. Power, at St. Leonard's Forest, Sussex, in 1866.

ERRATUM.

At page 261, 10th line from the bottom, insert a comma after "white" and erase the one after "margin."

Page 263, 15th line from the bottom, for "4th" read "3rd."

Lee, April, 1869.

Note on the oviposition of Octotemmus glabriculus.—Last autumn, I had a portion of a thick white tough fungus (Polyporus ——?) containing this beetle abundantly, several of them being engaged in oviposition. The female beetle by herself makes a sinuous gallery of rather more than her own width; the eggs, each of which is of a somewhat flattened ovoidal form, its longest diameter being about one-fifth the length of the beetle, are laid at the bottom of little cavities, irregularly disposed along the sides of the burrow. The egg, laid on its flattened side, just fits the bottom of the cavity; the remainder of the cavity, which is wide towards the burrow, is filled up level with its wall with the finely comminuted fragments of fungus removed from the end of the burrow, and so firmly packed, as easily to come out in one mass; six was the largest number of eggs I found so placed along one burrow, but I had no reason to suppose this to be the full number, as the beetle was still at work. Having placed some beetles on a fresh portion of fungus, I found, at the end of a week, that a newly-formed burrow contained three eggs.—
T. Algernon Chapman, M.D., Abergavenny, April, 1869.

Note on the pairing of Cheiropachus quadrum.—Some months ago I picked up a few branches broken from an apple tree, which were completely infested by Scolytus rugulosus; \* beneath the bark were numerous Chalcididous larvae, which had preyed on the Scolyti, so numerous, that they must have destroyed quite half of them. Having kept them in a warm room, though the Scolytus is only just beginning to appear (April 8th), the parasites emerged during February; they were chiefly Cheiropachus quadrum, of which a dozen or two came out every day for some time. As the opportunity of making the following observation cannot be frequent, I think it is probably worth recording.

<sup>\*</sup> I shall be happy to send the Scolytus to any one who will enclose return postage.-T. A. C.

298

On February 15th, I observed two specimeus of Cheiropachus face to face on a piece of stick, their antennæ, though bent downwards, as in the position of repose, were in active tremulous motion, and the insects occasionally advanced so that those organs touched. They frequently touched the wood also with their antennal tips; and, on looking closely, I saw a minute orifice in the bark, in which I soon made out a pair of jaws working. This hole was enlarged rapidly, and the head of a Cheiropachus soon became visible. On the head emerging, the antennæ of those outside worked even more vigorously, and seemed to increase the efforts of the enclosed Cheiropachus to escape.

On the thorax of the latter (which proved to be a female) appearing, it became obvious that the two outside were sworn foes, each alternately edging the other off for a little way, the antennæ continuing vigorously working, and now all the time touching the female. Suddenly the two males seized each other by the jaws, and for a moment were quite still, just as the female completed her escape. The next movement was so extremely rapid, that I could not see the details—the female came out so quickly, that it appeared as if she would have got away; but in an instant one of the males completely disappeared, the other was seated on the back of the female, and pairing had occurred; the whole transaction having lasted less than a minute, though possibly my observations disturbed them. Several other specimens were close by, apparently males, whose size and strength were unequal to a competition with the two in possession. I may remark that Cheiropachus is able to leap a distance of nearly an inch. The above observations explain at least one use of that power, and also that in a winged species of Chalcis pairing occurs immediately on the exclusion of the female, as it is well known to do in some apterous and partly apterous species .- ID.

Discovery of a male Cynips.—Through the kindness of Mr. Darwin I have received both sexes of a species of Cynips; they were bred from the Black Oak (Quercus spongifica) by Mr. Benjamin D. Walsh, the American Hymenopterist. The gall from which the male and female (Cynips aciculata) were obtained is larger than the bullet-gall of the oak so common in England, being two inches or more in diameter. According to Mr. Walsh's observations the males are only obtained from those galls which develope flies early in the season, two months before the great antumnal brood appears; the latter all being invariably of the female sex. Following up this hint, we may hope this year to obtain males of Cynips lignicola.—
F. SMITH, British Museum, 16th April, 1869.

An early swarm of Formica nigra.—I was walking yesterday through the Botanical Gardens here, when my attention was suddenly attracted by some winged ants running up the glass of the Cactus-house. Many male and female specimens were struggling in the webs of sundry gaunt, hungry-looking spiders. Upon inquiry I ascertained from one of the attendants that they had begun to swarm about the 2nd inst. Their nests seem to be situated close to the hot-water pipes, which have maintained a temperature in the house, during the last two or three months, of 60°—65° Farenht. by day, and 55°—60° by night. The attendant has not been aware of the existence of the nests for more than a fortnight; but, unless memory fails me, this ant used to remain active all through the winter in the neighbouring Palm-house, which is scarcely, if at all, warmer.—A. E. EATON, The Union Society, Cambridge, April 9th, 1869.

Cilia spinula and Notodonta trepida in Kircudbrightshire.—In his interesting list of Rosshire Lepidoptera, Dr. F. Buchanan White mentions Platypterya lacertula and falcula as the only two Scottish Drepanula. There are, however, at least three, as Cilia spinula is found in Kircudbrightshire. I found, under oak, last autumn, two pupes of Notodonta trepida in the same county, one of which emerged on the 3rd April.—W. Douglas Robinson, Edinburgh, 5th April, 1869.

Lepidoptera captured in Morocco.—During the spring of the year 1868, I resided for two months (February, March, and beginning of April) in Tangier (Morocco); and although the state of my health did not permit me to devote much time or energy to entomological pursuits, still I made a point of capturing such insects of all orders as happened to fall in my way; and thinking that a list of the Lepidoptera thus secured may not prove uninteresting to the readers of the Entomologist's Monthly Magazine, I have much pleasure in contributing the following, in which I have adopted the arrangement and nomenclature of Staudinger and Wocke's "Catalog der Lepidopteren Europa's und der angrenzenden Länder, 1861."

#### RHOPALOCERA.

Papilio Podalirius.—One specimen of the var. Feisthamelii (Dup.), taken in a deserted garden near Tangier beginning of April.

- Thais rumina (L.)—Of the typical form of this beautiful species I met with but two examples. The variety Medesicaste (III.) was common during the month of March in lanes in which the food-plants of the larva, the Aristolochia, were growing profusely, and I captured several fine and unusually large specimens. Pieris brassica (L.)—Very abundant both in the larva and image state.
  - , rapæ (L.)-Abundant.
  - napi (L.) -Not common.
  - ", Daplidice (L.)—I saw, but did not capture, several specimens of a Pieris, which I imagine must have been this species, early in February.
- Anthocharis Belemia.—The var. Glauce (Hb.) not uncommon on waste land end of March.
- Anthocharis Douei (Pierret).—The 3 occurred frequently throughout the months of February and March. The 2 was very scarce, and I only obtained three specimens. Mr. A. G. Butler has pointed out to me that this species is the true Anthocharis Eupheno of Linnæus, whose typical specimens were captured in Barbary, and whose description answers exactly to Pierret's Douei, and to the specimens the occurrence of which I now record. A new name must now be assigned to the very distinct South European species which has hitherto represented A. Eupheno (L.) in our collections, and the name Douei (Pierret) must sink into a synonym for Anthocharis Eupheno (Linn.). (Vide ante p. 271). It is extremely probable that both species occur on the European continent.
- Colias Edusa (Fab.)—Common at the end of February on the Dar-al-Clow, a range of hills lying some twenty miles S.W. of Tangier. A few specimens taken close to Tangier a month later.
- Rhodocera rhamni (L.)-Common in February.
- " Cleopatra (L.)—Ditto d Thecla rubi (L.)—Abundant; March.
- Thestor Ballus (Fab.)—Common in the beginning of March; its favourite habitat being rubbish-heaps near the town.

Polyommatus Phlæas (L.)-Very abundant; February and March.

Lycana Argiolus (L.)—Common; March.

Vanessa Atalanta (L.)-Very abundant.

" cardui (L.)—Ditto.

Pararga Egeria (L.)—Of the typical form of this species I did not observe a single specimen, but the var. Meone (Hb.) was excessively abundant during the whole time of my stay in Africa, and of this variety I secured a fine series.

Cononympha arcanoides (Pierret).—Not uncommon in the hills in the neighbourhood of Cape Spartel; March and April.

Spilothyrus malvarum (Ill.)—I met with a few examples of the var. australis (Zell.) early in February in the village of Marshen, near Tangier.

## HETEROCERA.

#### SPHINGES.

Detlephila Livornica (Esp.)—Several specimens, in fine condition. This insect seemed especially to affect the flowers of the various kinds of lupin with which the hills in the neighbourhood of Tangier are clothed during the mouth of March. Is this species usually double-brooded? I observe many notices of its capture in England last season, most of which are recorded in August.

Macroglossa stellatarum (L.)—Common.

#### BOMBYCES.

The only example of this family which I obtained was a large insect, apparently of the genus Bombyx, to which I cannot at present assign a cognomen. Should it prove to be a new species, it may form the subject of a further communication to the E. M. M. I met with several colonies of a processionary caterpillar, I presume of the genus Cnethocampa, on the plain of Had-el-Gharbeea, 30 miles S. of Tangier, but, unfortunately, I had no opportunity of rearing them to the imago state.

# Noctuæ.

Agrotis ravida (W.V.)—One specimen; February.

, pronuba (L.)—Common at light.

" Puta (Hb.)—One specimen at light; March.

Hypena lividalis (Hb.)—One specimen; March.

, obsitalis (Hb.)—Several specimens; March.

#### GEOMETRÆ.

Acidalia incanaria (Hb.)—I met with one specimen of the var. (?) calcearia (Zell.) in April.

Eupithecia pumilata (Hb.)—Common; early in April.

#### CRAMBINA.

Botys ferrugalis (Hb.)—Abundant ; March.

Nemophila noctuella (W.V.) [hybridalis Hb.]—Abundant.—Trovey Blackmore,
The Hollies, Wandsworth, S.W.

#### TINEINA.

The following species, collected at Tangier, in March, have been kindly handed to me by Mr. Blackmore:—

Tinea pellionella, L.

Micropteryximperfectella, Standinger, Stett. E. Z. 1859, p. 236, H.—S., N. Schm., f. 113. Of this pretty little species I did not previously possess a specimen. Dr. Standinger met with it in the S. of Spain, in May.

Plutella cruciferarum, Z.

Lithocolletis pomifoliella, Z. and a single specimen of another Lithocolletis, which does not seem referable to any known species. Mr. Blackmore informs me that Coronilla was one of the commonest plants where he took these insects, and possibly the undetermined Lithocolletis may be attached to that plant. I throw out the suggestion for future travellers.—H. T. Stainton, Mountsfield, Lewisham, March 20th, 1869.

# Reviews.

REPORT ON THE CULTURE OF THE JAPANESE SILK-WORM, BOMBYX YAMA-MAI, IN 1867-8, IN ENGLAND; by ALEXANDER WALLACE, M.D., M.R.C.P. Colchester, Benham and Harrison; 8vo. pp. 64. 1869.

In this bulky but inexpensive pamphlet Dr. Wallace gives the experience of two years' efforts to rear this fine Japanese silk-worm in England, by himself and by numerous other gentlemen who take an interest in the praiseworthy attempt to introduce among us a new branch of industry. If these endeavours should not meet with the success they deserve, it will not be for want of enthusiasm on the part of the author, who has for years devoted all his spare time to his favourite pursuit. We recommend this pamphlet to the notice of country gentlemen especially. Space will not admit of extracts; but we remark that the excessive heat of last season seems to have been anything but favourable to Dr. Wallace's object.

A CATALOGUE OF THE INSECTS OF NORTHUMBERLAND AND DURHAM (ACULEATE HYMENOPTERA). Newcastle-on-Tyne, 1869. T. J. Bold.

The Natural History Society of Northumberland has for many years afforded an excellent example to other local Societies by publishing thoroughly scientific and well-worked Catalogues of the productions of its district; and the pamphlet now under notice will add considerably to its renown, as being probably the first attempt towards a local Catalogue of the Aculeata in this country. Its author, Mr. T. J. Bold (well known in connection with the Catalogue of Coleoptera published by the same Society, and who luckily continues to work indefatigably at Entomology, as our columns testify), has wisely followed the arrangement used by Mr. F. Smith in his Museum Catalogues, and chronicles 133 species, being little more than one-third of those recorded as inhabitants of Britain. The strong points are evidently the Vespidæ and Sociales, whilst the Scoliadæ, Sapygidæ, Sphejdæ, Larridæ, Philanthidæ, and Andrenoides appear to be utterly unrepresented. Mr. Bold expects to add considerably to his list, and attributes the dearth of Fossores, &c., chiefly to the clay sub-soils, which are unfavourable for burrowing.

It would be as well if the printer of future Catalogues issued by the Northumberland Society were more carefully looked after, the present excellent little work being disfigured by certain mistakes, which are evidently merely typographical.

Entomological Society of London, 15th March, 1869. H. W. Bates, Esq., F.Z.S., President, in the Chair.

H. Grose Smith, Esq., of Surbiton, was elected a Member.

Mr. McLachlan exhibited a gigantic species of the family *Ephemerida*, measuring 3 inches in expanse of wings, sent from Veragua. He thought it might possibly be *Palingenia Hecuba* of Hagen.

Mr. F. Smith exhibited the new British Bee, Colletes cunicularia, collected in the Isle of Wight by Mr. Cooke, jun.

Mr. Butler exhibited varieties of several European Butterflies, captured by himself in Switzerland.

Mr. Stainton mentioned that in the neighbourhood of Mentone, &c., early in the year, Vanessa Atalanta was the commonest butterfly, and scarcely appeared to hybernate, whereas in England hybernated examples were rarely seen until the early summer.

The President exhibited a collection of Papilios from Japan, sent to him by Mr. Ward, of Halifax. They consisted of P. Machaon, P. Xuthus, and P. Xuthulus; in Japan P. Machaon was very variable, and shewed a tendency to approach its allies in coloration, whereas in Europe it was very constant. He looked upon that country, therefore, as the one which was the most favourable to the formation of incipient species in this group. For comparison he had added examples of the allied P. Zelicaon and P. Asterias, from N. America.

Mr. Hewitson communicated "Descriptions of new species of Diurnal Lepidoptera from Nicaragua and Ecuador."

The President read "Contributions to a Fauna of the Amazon Valley."

Mr. McLachlan read a Synopsis of the European species of Panorpa; and a description of a new species from Java.

5th April, 1869. H. W. Bates, Esq., F.Z.S., President, in the Chair.

Mr. Pascoe exhibited curious and interesting forms of Curculionida.

Prof. Westwood exhibited an example of the new species of Panorpa (P. nematogaster) from Java, described by Mr. McLachlan at the last meeting; this was from the Oxford Museum. Also examples of a Blatta (B. melanocephala) which had been found destructive in Orchid-houses in this country.

Mr. Bond exhibited Sciaphila communana, H.—S., new to Britain, captured in Wicken Fen.

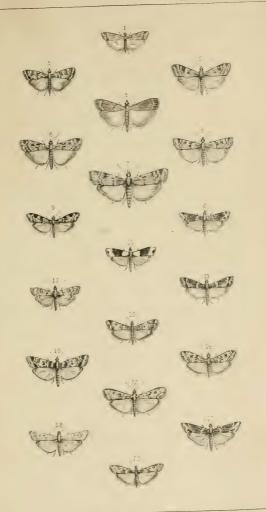
Mr. Druce exhibited two males of the very rare and magnificent Papilio Zalmozis from Old Calabar.

Mr. Smith exhibited a series of British Bombi, with their respective parasitic Apathi. He mentioned, with regard to B. subtervaneus, muscorum, and lapidarius, that the parasitic Apathi—campestris, vestalis, and rupestris, exhibited all the gradations of variation common to their respective foster-parents; whereas with B. pratorum, a moss-builder, the parasitic Apathus Barbutellus was considerably different. This latter Bombus was, however, a very good-tempered bee, whereas the others were very irritable; hence the non-necessity of exact mimicry.

Mr. A. R. Wallace read "Notes on eastern Butterflies." Mr. Hewitson read "Descriptions of new species of Diurnal Lepidoptera."

Mr. Baly communicated "Descriptions of new Phytophaga."

Dr. Sharp communicated a "Revision of the British species of Homalota," enumerating and describing 157 species, 29 being new to science.



J Creewick Cole So 1009



THE

# ENTOMOLOGIST'S

# MONTHLY MAGAZINE:

CONDUCTED BY

H. G. KNAGGS, M.D., F.L.S. E. C. RYE.

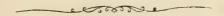
R. McLACHLAN, F.L.S.

H. T. STAINTON, F.R.S.

C. F. There's D. C.

# VOL. VI.

"The sight of a well-stored cabinet of insects will bring before every beholder not conversant with them, forms in endless variety, which before he would not have thought it possible could exist in nature, resembling nothing that the other departments of the animal kingdom exhibit, and exceeding even the wildest fictions of the most fertile imagination."—Kirby § Spence.



248871

LONDON:

JOHN VAN VOORST, 1, PATERNOSTER ROW

1869-70.

LONDON:
PRINTED BY A. NAPIER, SEYMOUR STREET, EUSTON SQUARE.

# ntanalogist's Monthly Magazine

D'SCRIPTION OF A NEW SPECIES OF HEMIPTERA (NYSIUS SCOTTI)
OCCURRING IN BRITAIN.

BY EDWARD SAUNDERS, F.L.S.

NYSIUS SCOTTI, n. s.

Pale ochreous-brown. Head with a fuscous spot on each side on the inner margin of the eye, and extending to the base. Antenna: 1st joint with a narrow brown ring near its middle; 2nd joint at its apex, and 4th joint slightly, darker than the rest. Thorax very largely and deeply punctured, with a raised pale central keel; posterior angles produced and rounded, flavous, with a brown spot above and below them. Scutellum fuscous near its base, deeply and largely punctured, with a strongly marked flavous central keel. Clarus and corium covered with short, fine, adpressed golden hairs; their junction with the membrane narrowly fuscous; apex of corium with a small brown spot. Membrane purely transparent. Beneath: the first abdominal segment black in the middle; 2nd segment also black in the middle, but with two spots of the ground-colour on each side; 3rd with two brown stripes on each side; 4th and 5th ochreous. Thighs with round brown spots: intermediate and posterior tibiæ slightly fuscous at the apex: tarsi with the end of the first joint, and the two apical ones wholly, fuscous. Length 2½ lines.

I took three examples of this very distinct species by sweeping heather on Reigate Heath, in August of last year. Of the continental species it appears nearest allied to *N. senecionis*, from which it may be separated by the narrower membrane, the differently coloured antennæ, and other structural characters. I have named it after Mr. J. Scott, who has so long devoted himself to the British insects of this group, and to whom I am greatly indebted for much valuable information and assistance.

Hillfield, Reigate: 8th May, 1869.

TWO NEW SPECIES OF DIPTERA (SCATOPSE PLATYSCELIS AND THRIPTICUS BELLUS, LOEW) INHABITING ENGLAND.

BY G. H. VERRALL.

The above two species having just been described by Loew, in his Supplement to Meigen, from a specimen of each taken by me in England, I think a few notes on them may have some interest.

- 1. Scatofse platyscells is described as "a trifle larger than & bifilata, Hal., consequently one of the largest species of this genus, and easily recognised by its affinity to the much smaller S. clavipes, Lw It is shining black, with only the last segment of the abdomen dull hind tibiæ flat, exceedingly enlarged toward the tip; halteres blackish.' I captured one specimen near Lewes in 1867, crawling on a bare piece of ground on a steep bank under bushes.
- 2. The other species belongs to the Dolichopida, and is described by Loew as "Thriptious Bellus, Q. Front and upper half of the face bluish-green, lower half more steel-blue; antennæ and palpi black; cilia of lower orbit setiform, yellowish-white; vertex with tawny bristles; thorax shining violet with yellowish hairs, which are numerous and short on the anterior part, scanty, long, and setiform on the posterior; scutellum steel-blue with two yellow bristles; abdomen shining bluishgreen, without bristles, but with short yellowish-white hairs; coxe bluish-green, front pair with short pale yellowish hairs, trochanters yellow, front pair partly brown; femora shining blackish-brown, the base being pale yellowish to a small extent; halteres whitish; tegulæ (alulæ) with white cilia; wings limpid, hardly greyish, with the veins brownish-black, third and fourth longitudinal veins totally obliterated." This is one of the most brilliant species of the whole of this brightlycoloured family, though it is one of the smallest. I have taken it between Kew and Richmond, but it is most difficult to capture from its smallness and activity. The genus Thripticus was only erected in 1864, in the Stettiner Ent. Zeit., by Gerstäcker, from a single male specimen caught near Berlin.

Denmark Hill, London, S.: May, 1869.

ADDITIONS, &c., TO THE LIST OF BRITISH COLEOPTERA, WITH DESCRIPTION OF A NEW SPECIES OF OCHTHEBIUS.

BY E. C. RYE.

Having recently communicated certain of our Brachelytra, concerning which I entertained doubts, to M. Albert Fauvel of Caen, who is making an especial study of that group, and who has courteously given me the benefit of his opinion upon my difficulties, I am enabled to publish a few remarks tending, as I hope, towards that reconciliation of British and Continental species which is so much needed by us.

Oxypoda exigua, of my collection at least, is, as I had anticipated, O. investigatorum, Kraatz, Berl. Ent. Zeit., 1864, p. 130. I have not

seen the true exigua, which is stated to resemble Homalota pygmæa, and to have the apex of the abdomen almost entirely unpunctured and shining.

Oxypoda glabriventris, mihi (Ent. Mon. Mag., 1st Feb., 1865), is the Calodera (Ilyobates) Bonnairei of Fauvel (Bull. Soc. Normand., ix, 1865, p. 287). The generic diagnosis of Ilyobates appears to differ from that of Oxypoda solely as follows (the ligula, palpi, and tarsal formula being in each identical):—ILYOBATES, "maxillæ mala interiore intus summo apice spinulis 12 longioribus ciliata;" Oxypoda, "maxillæ mala interiore intus apice spinulis ciliata:"—the latter of which propositions would logically include the former. Not feeling inclined to destroy my solitary example by dissection, I referred it to the latter genus, on account of its great structural resemblance to O. lucens and certain other of the small yellow species, and also on account of not observing in it the characteristic coarse punctuation of Ilyobates.

Oxypoda rufula, Wat. Cat., appears to be identical with O. riparia, Fairm., Soc. Ent. de Fr., 1859, 38.

Oxypoda Waterhousei, mihi (nigrofusca, Waterh., nec Steph.), according to M. Fauvel, is O. amæna, Fairm., Faune Ent. Fr., 436.

Oxypoda annularis, Wat. Cat., appears to be pallidula, Sahlb.

Oxypoda misella, Waterh. (nec Kraatz), according to M. Fauvel, who has examined one of my specimens from Shirley, on which the species was introduced as British, is O. ferruginea, Er. The latter has hitherto been considered by us as synonymical with O. brachyptera, Steph.; but the long antennæ of that insect render such a conjunction impossible.

Oxypoda nigrina and aterrina of Waterhouse are, as already recorded, respectively to be referred to O. sericea, Heer, and O. incrassata, Muls. In the last edition of de Marseul's Catalogue, O. aterrima is, however, reinstated, and O. nigrina is separated from O. sericea by 14 species,—O. exigua, moreover, as has been before observed, being given as a synonym of the latter.

Bryoporus Hardyi, a good species, closely allied to Bolitobius pygmæus, is, according to M. Fauvel, who has seen other examples from the Pyrenees, to be referred to Mycetoporus.

Tachyporus scitulus of our collections is T. pusillus, dark var. True scitulus is more convex, deeper black, and with more widely punctured elytra.

Philonthus temporalis, judging from a type kindly communicated to me by M. Fauvel, has certainly not yet been correctly recorded as British.

Lathrobium Jansoni, Crotch, according to M. Fauvel, who has seem the original type, is most decidedly only L. pallidum of a rather darker colour than usual; variations in that respect being found on the continent. M. Fauvel does not, however, make any remark as to the discrepancy in the length of the elytra.

Lithocharis ruficollis, Crotch Cat. (tricolor, Marsh., Steph.), is L. vicina, Brisout, 1859, according to M. Fauvel.

Stenus annulatus, Crotch, is referred to S. aceris, Boisd. et Lac., by M. Fauvel, who states that species to be erroneously considered as identical with impressus, Germ. (annulipes, Heer). They are given as distinct by de Marseul (1866). M. Fauvel states that our S. impressus is his pyrenœus, M.S.

Homalium crassicorne, Matthews (of which the unique type has been most kindly lent to me by that gentleman), is, in my opinion, certainly a depauperised immature example of the rare O. salicis. In this view I am corroborated by M. Fauvel.

Homalium brevicorne, Matthews, nec Er., is vile var., according to M. Fauvel.

Homalium gracilicorne, Fairm., Faune Ent. Fr., 642. I have long had a single, highly-coloured (possibly immature) example of this species set aside as new to our lists; and I now possess typical specimens given me by Dr. Power, who has recently taken several. It is closely allied to vile. M. Fauvel has corroborated this species for me.

OCHTHEBIUS POWERI, n. sp.

Elongato-ovatus, leviter convexus, fere opacus, obscurè aneo-piceus, pedibus fuscis, geniculis tarsis palpisque nigrescentibus; prothorace subtransverso, antice valde dilatato, angulis anticis prominentibus, grosse creberrimeque punctato, canalicula mediana, foveolis quatuor discalibus (quarum duo basales, majores, insecto à posteriori viso, Trogophlæorum thoracis signaturam simulant), sulcisque lateralibus (irregularibus, antice profundius impressis foveolasque discales anticas invadentibus) insculpto; elytris nitidulis, setis brevissimis, albidis, sat evidenter striatis instructis, creberrime fortiterque punctato-striatis, punctis primo visú fere transversim confluentibus.

Long. corp. vix \(\frac{3}{4}\) lin. (Angl.).

I am unable to refer this well-marked little species satisfactorily to any published description; and M. C. Brisout de Barneville has returned it as utterly unknown to him.

A single example was originally taken in brackish water on the south coast by Dr. Power in 1866; and it has recently been found in some numbers by Drs. Sharpe and Crotch under similar conditions near the Chesil Bank.

Its small size prevents it from being confounded with any of our species but O. exaratus; from which its duller appearance, closer punctuation, posteriorly more contracted thorax, &c., at once distinguish it; but it cannot be satisfactorily compared with any of our recorded Ochthebii, suggesting, as it does, some of the characteristics of ruft-marginatus and others of the giant punctatus.

CIS VESTITUS, Mellié, Soc. Ent. de Fr., 1848, p. 354. I possess a single example of this species, given to me by Mr. T. Morley, who took it in the neighbourhood of Manchester. It is about the size of medium festivus, but is narrower and flatter than that insect. Its thorax is narrower and more contracted in front than in any of our species, and is dull, being very closely punctured. The elytra are rather shining, irregularly and closely punctured, and clothed with pile, as in hispidus.

BAGOUS INCERATUS, Gyll. (encaustus, Boh.), Schön., 76. Mr. Douglas took a single specimen of this exotic-looking beetle whilst hunting for Corixæ in a brackish ditch near Gravesend, and I bring it forward on M. Brisout's authority. It appears to occur in Austria and the meridional parts of France in salt and brackish waters; also in Germany and South Russia, and in the Caucasus and Pyrenees. It is larger than any of our recorded species, except binodulus, but is utterly unlike any of them, owing to its comparatively short legs, broad flat build, shining appearance, &c. Mr. Douglas' specimen is of an olive-grey colour, with more or less distinct brownish markings on the elytra, an irregular transverse band on the disc being the most conspicuous. The funiculus of its antennæ is 6-jointed.

CEUTHORHYNCHUS ARCUATUS, Herbst, Gyll. (Schon., 154). This handsome species (which I also bring forward on the authority of M. Brisout) was taken some years ago (and also recently) by Mr. J. Kidson Taylor of Manchester; it has also been found by Mr. J. Chappell of the same place, at Cleethorpes, and on the Lancashire coast. I am indebted to each of those gentlemen for a specimen of it. According to M. Brisout it is rare in the north but more abundant in the centre and south of France. It differs from chrysanthemi, Wat. Cat., amongst other things, in not having the lateral white marking carried on to the scutellar patch, and from asperifoliarum in having the lateral marking originating nearer the shoulder, &c.

Cionus olens, Fab., Redt. I have detected a single example of this fine species among some British Rhynchophora taken by Mr. Douglas, and sent to me for names. It appears to be spread over the whole of Europe, and is not rare in the environs of Paris, on Verbascum, (June

during the early spring months. It is about the size of *C. thapsus*, but unlike any of our other species, is uniformly set with greenish-grey hairs, with a black discal and smaller sub-apical spot on the suture of the elytra.

Tomicus autographus, Ratz., Forst., i., 160, 7. My friend, Mr. T. Wilkinson, of Scarborough, has sent this fine species to me to be named. It was taken by Mr. Lawson, of the same place, about five weeks ago, in tolerable plenty, in some young larch trees in a fir plantation about a mile and a half from Scarborough, where, from the appearance of the trees, it must have been very abundant last year. It belongs to the sub-genus *Dryocætes*, Eich., and is allied to villosus, being larger and especially broader than that common insect, with the hairs not so stout or long, the thorax broader and shorter, the sutural stria not so well defined, the apex of the clytra less abruptly retuse, &c.

7, Park Field, Putney, S.W. 13th May, 1869.

Note on the habits of Phlwophthorus rhododactylus and Hylastes obscurus.—In May, and earlier or later, according to the season, Phlwophthorus rhododactylus makes the galleries in which its eggs are deposited, in the bark of Furze (Ulexeuropaus). That the furze be dying, or recently dead, seems the only requisite to its attack. I have found it in furze killed by being cut, and in that which appeared to have died of old age; and, though preferring branches about or under an inch in diameter, it is found in all—from the largest to the smallest. As branches of old and sickly plants die from year to year it attacks them, and probably accelerates the death of the plant. It is equally abundant in Broom (Cytisus scoparius). The only apparently suitable materials in which I have not found it were a number of furze bushes smothered out of existence by the rapid growth of some fir trees, larchy and spruce.

The gallery is formed directly upwards for nearly a quarter of an inch, and then divides into two branches, at first at right angles to each other, but, as they go upward, tending to become parallel. They are usually of unequal length, and one is sometimes absent. The longest I have seen was less than an inch in length, and half-an-inch would be a fair average. I always find in them a pair of beetles during their construction, and would note here the analogy with Hylesiaus, where a two-branched burrow is also associated with the habit of both beetles being engaged in its construction. The entrance of the gallery is placed out of sight behind a loose scale of bark, or some slight projection. The ejected frass, which all appears to have been eaten, lies loosely agglutinated together outside, but no operculum covers the opening. I have several times met with an inverted gallery—that is, one going downwards instead of upwards from its entrance. The eggs are laid along both sides of the branches, twenty-five being a maximum for one side of one branch, and the total rarely exceeding forty. The time occupied in their con-

ruction I do not know; in some kept under observation, about a dozen eggs had sen laid in three weeks from the date of commencement of a burrow. The eggs is situated rather closely together, each in a little hollow scooped out of the bark; and they, as well as the insterspaces between them, are covered over with a layer? In the frass, which does not appear to have been eaten; so that the sides of a completed burrow are formed of this frass, behind which are the eggs. The larval lart in every direction from the parent gallery, but tend to travel vertically; so nat, when full grown, most of them do so. The greater part of the broods become erfect beetles in late autumn, and pass the winter at the ends of the larval urrows, slowly eating a gallery upwards or downwards, according to the direction he larval gallery had assumed. I have seen galleries so eaten for winter sustenance more than an inch long; the majority, however, eat very little.

What becomes of those beetles that escape in autumn I do not know; their number is not great. Others, also few in number, remain as larvæ throughout the winter; and I have found odd beetles, and even larvæ, under bark from which the broods had apparently gone during the previous year.

Hylastes obscurus also attacks furze, but is more particular as to its pabulum than P. rhododactylus; it rarely attacks stems of less than an inch in diameter, and rarely, almost never, cut-down sticks; it is partial, however, to the stumps that remain in the ground, and stems of plants dying of age. The latter frequently die on one side first, and this first-dying side is the favourite habitat of H. obscurus. The sticks that it has abandoned for one or more years are very numerous, as compared with those that still contain it; whereas, with P. rhododactylus, abandoned sticks are rare. This probably arises from rhododactylus more completely separating the bark (leaving a very beautiful "typograph"), and from the smaller size of the branches affected by it causing them much sooner to assume the aspect of dead and rotten wood; whereas those long abandoned by obscurus often continue to look as if they might contain the beetle, until they are quite rotten. I have found few likely stems of furze without traces of obscurus, but only a small proportion with hat beetle still present. I have also found it, though not abundautly, in broom.

The parent gallery of obscurus has only one branch, which is very straight, accurately transverse to the stem, and  $\frac{3}{2}$  of an inch to an inch in length. I usually find only one beetle in it, but I have several times found a second, which I believe to have been the male, and in these cases there was usually an abortive branch of the burrow in the opposite direction from the main one, about the length of the beetle; apparently eaten by the male for food, and containing no eggs.

The eggs are laid at the bottom of little cavities on either side of the burrow, and covered by frass, which fills the cavities to the level of the wall of the burrow, of which there is usually a small unoccupied portion between each cavity, often of such a length that it looks as if four or five eggs had been omitted. I have supposed that the male, or several different males, came and went during the construction of the burrow; and that these blanks represented periods when the male was too long absent, as I have found them also in other species where the male is sometimes absent, but very rarely in any species in which the male is always present or always absent. I have found eggs laid so near the advancing extremity of the burrow that the beetle must have come out and gone in again backwards to have laid it, though I have never seen a beetle in this position. The number of eggs

laid is small; a dozen on either side would be above the average, though I have seen more. The larvæ burrow upwards and downwards. Many of the beetless assume the perfect state in autumn, and either continue the larval burrow until spring, after the manner of rhododactylus, or, escaping, make a fresh longitudinal burrow in a higher portion of the same stick in which they hybernate, apparently eating a little all the winter. I was much puzzled by finding, during the winter, one or more beetles in longitudinal burrows branching from parent galleries, of which the young brood were already for the most part perfect. I believe these were beetles of the young brood which had used the openings of the old galleries to enter the bark, just as they instinctively go to the bottom of a crevice to begin burrowing. Some assume the perfect state during the winter, and not a small proportion pass the winter as larvæ; even now (May 14th) I have some still in the larval state. The period of oviposition is rather later than in rhododactylus, and occupies nearly a month.

The full-grown larvæ of Scolytus almost invariably burrow into the wood to form a hybernaculum; I have frequently noticed a similar habit in rhododactylus, and more rarely in obscurus; and, as throwing light on the use of this habit, I may note that in furze they rarely do so, but that those passing the winter as larvæ in broom almost invariably do, the bark of broom being thinner, and when mined by these beetles much more easily separated, a mere touch removing it when soaked with rain.

Obscurus, under the name of trifolii, is said to occur in the roots of clover, which is its recognised habitat; and as clover belongs to the same natural order as furze and broom, it seems by no means unlikely that it would eat clover in default of them, but I am inclined to doubt its ovipositing in them.

These beetles seem very free from parasites, a predaceous-looking larva, with a double-hooked tail (very like a miniature Pyrochroa larva), and from which I have bred Rhinosimus planirostris, is the only one I have found. It is more abundant in old burrows than in those still containing larvæ; so that, if it is carnivorous, and is not satisfied with the damp frass, it probably eats Acari, a Thrips which is common in old burrows, and other such creatures, more frequently than the larvæ of Phlæophthorus or H. obscurus.—T. Algernon Chapman, M.D., Abergavenny, May, 1869.

Note on Argyra leucocephala.—Mr. Scott told me lately of an interesting habit he has observed in this Dipteron. He met with it in considerable abundance near Morpeth, and says it resembled snow falling and melting immediately it touched the ground; for, when on the wing, the silvery gloss on the body appeared white, but, when the insect settled, the closed wings at once obscured it. This is probably an instance of an obscure colour protecting an insect when at rest, like the brown underside of the common 3 "ghost" moth.—G. H. Verrall, London, April, 1869.

Queries respecting a few willow galls.—Thanks to a botanical friend, I shall be enabled to give all my willow galls, except a few, their true botanical position in the descriptive list of galls upon which Mr. Müller and myself are now engaged for this Magazine. I therefore take the liberty of making a few remarks on these galls, but before I commence so doing, I may observe that my collection is indebted

or all of them to the kindness of friends, none of whom, however, sent a specimen of the willow fit for identification. I shall therefore be much obliged to anyone who can tend me any of the galls I have briefly described below, accompanied by a specimen of the willow from which the gall was obtained; and I may add that I shall be much obliged if any other willow galls, sent to myself or to Mr. Müller, be similarly accompanied.

The first gall to which I will draw attention was found in Hare Wood, about seven miles from Leeds. It is the form and size of a pea—yellow, with brown spots. The leaf of the willow is lanceolate, and finely serrate towards the tip. The second is a flattish, bag-like gall, orbicular or lobed. The willow is a very small leaved species, and is probably very closely allied to Salix repens. I also wisk to know the species of the willow upon which the Cambridge rose gall occurs, which Mr. Bond exhibited at the Meeting of the Entomological Society in March, the leaves of which are broadly lanceolate, serrate, and white beneath. I have received a leaf which I imagine to be that of Salix cinerea, bearing a large reniform gall on its underside, from Cornwall, and I believe also from the North. In conclusion I may add, that I am much in want of the gall Andricus noduli, which Mr. Marshall (vol. iv, p. 102) states, on the authority of Hartig, is the young shoot of the oak, distorted, and loaded with excrescences, said to be common in England.—Henry Waring Kidd, Godalming, May 7th, 1869.

Note on Ætorhinus bilineatus, Fallen.-Very few collectors of British Hemiptera have, I fancy, met with this little bug, so that a few notes on its distribution here may be interesting. The first record, and probably the only one, of its capture in Britain, is in vol ii, p. 246, of this Magazine, where, after describing the species, Mr. Douglas mentions that three specimens had been taken by the Rev. T. A. Marshall in Leicestershire. When at Rannoch, in 1867, I collected a few Hemiptera, and among them four or five specimens of the Etorhinus, which I did not recognise at the time, nor until Mr. Douglas, in looking over my specimens, named it for me. Moreover I did not know the exact spot where I had taken it. My visit to Ross-shire not only revealed the metropolis of the species, but gave me a hint as to the locality at Rannoch. At Achilty there are numerous small groves of aspens (Populus tremula) here and there along the hill-sides, and almost every one of these groves appeared to be dedicated to Etorhinus bilineatus. Now at Rannoch the aspen is not a common tree, and I only remember one off which I got any bugs, and these I have no doubt were this species. For the benefit of Hemipterists who may visit Rannoch I will give precise directions. About three miles from Kinloch on the road to Dall, the first cultivated field (bounded by a wall) appears, lying between the road and loch. On the left side of the road is a small wood; near a very small barn that runs through the wood and crosses the road, stand the aspens. At Achilty the bug was very common, but the male was much rarer than the female, in the proportion of about 1 in 10. They were most abundant at the end of July.

Some other rare bugs occurred at Achilty. Among them were Sigara minutissima and Hydrometra odontogaster, &c.

As I am collecting materials for a list of Scottish Hemiptera-Heteroptera, I would be greatly obliged for any (even the shortest) notices of the bugs of any

10 [June]

place in Scotland. Coleopterists probably often come across these insects; so if they could find room for them in their laurel-bottles, and, at the end of the season, send them to me, I should be very grateful.—F. Buchanan White, Perth, May 10th, 1869.

Abundance in 1868 of the winged form of Velia currens.-Of this insect, so common on running water, I had for many years sought in vain for a winged individual; the hundreds I had taken for examination were all apterous, and I had known only of two or three winged examples being found over a wide area within the period. I was therefore greatly pleased when, in April last year, one of my boys caught, on one of our streams, a fully developed example, and, I having incited him to further search, he soon brought 20 or 30, and above 100 were taken in April and May by others. What was the cause of the acquisition of wings by so many individuals? There was nothing exceptional in the weather of 1867 to favour development—the insects appeared before the heat of 1868—and there have been no winged ones since, as might have been expected if heat influences full development; so I apprehend the cause must be sought in other than external circum-At present, and perhaps for ever, if this be true, the cause of such irregular development must be hypothetical. In Nature there is always a reserve of power-a capability of replenishing exhausted force and renewing action in one way or another. In insects we see this, for instance, in undeveloped bees and ants, the stage to which the ordinary workers attain being sufficient for the race; but if occasion arrive which requires a different condition of life, development is not arrested in so many individuals as usual-the reserve is brought forward. So it may be as to the development of wings in Velia-and doubtless in other insectsthat the law of Infinite Wisdom, under which the creatures ordinarily exist without wings, has latent power for the production of these members when they are to become necessary for the welfare of the race, either in removing the individuals to better localities, or in taking them to mingle with other stocks and so prevent deterioration. I say when the wings are to become necessary, for they must be prepared in the penultimate state, and the creatures can have no prescience or will of their own in providing for their unknown future .- J. W. Douglas, Lee: 14th April, 1869.

Hints for finding eggs and larvæ of Lycæna Arion.—My observations on the habits of the larvæ of Chrosis euphorbiana seem to have contributed to finding that species in England. Perhaps a suggestion with reference to Lycæna Arion may enable English entomologists to be the first to unravel the Natural History of the "Large Blue," rare as it is with them.

I may mention, in the first place, that I was astonished to find that in the mountainous parts of Silesia this species had different haunts from those which I hitherto observed it to frequent in the plains; for, when at Salzbrunn, in 1838, I saw it plentifully in the moist open meadows at the foot of Mount Hochwald, whereas near Glogau, as well as at Frankfort and Meseritz, it frequents dry fir-forests, on the most barren and sandy ground. My astonishment would probably have been less had I been then acquainted with the food-plant of Lycana Arion, for I well recollect that in those moist meadows Thymus serpyllum was very abundant.

With us this butterfly haunts the lofty fir-forests, where the ground is clothed with bilberry (Vaccinium myrtillus), mosses, and straggling plants of wild thyme Thymus serpyllum). It is to be met with throughout the month of July. In order o obtain food, it generally resorts to the open places where T. serpyllum grows more freely, and displays plenty of blossoms. There we may often meet with this nutterfly in company with hosts of Hipparchia Semele and Alcyone, Epinephele Lycaon (Eudora), Canonympha Arcania, all quenching their thirst in the nectar of the flowers of large patches of thyme. At night it reposes between the needle-leaves of some fir-bush, where it may be rather easily seen.

Spending a day (July 28th, 1857) in the Glogau Stadtforst (a locality visited by Mr. Stainton two years previously, as recorded in the Entomologist's Annual for 1856, p. 128), I took the opportunity in the morning, before the heat of the day, to watch closely the females of *Arion*, which were flying slowly, and to observe their doings.

I saw them sit down on the stems of Thymus serpyllum, and, after sipping from a few flowers, bend their abdomens between the flower-stalks, on which they deposited a pale green egg, sometimes not without some apparent pains. I gathered a score or so of twigs, each with a single egg. In the afternoon I noticed them proceeding in the same manner, but as it was then too hot in the sunshine, the oviposition was only performed under the shade of the trees.

Now what became of these eggs? I totally neglected them! Having found it so easy to obtain them, I postponed breeding the larvæ for some other year when I should be less busy! But from that day to this I have never obtained any more eggs, and here at Meseritz the species is so scarce that I have had no opportunity of observing the interesting history of our largest Blue.

I may mention, in conclusion, that, as the larvæ appear to pass the winter when about half-grown, it will probably be no easy work to rear them to maturity.—

P. C. Zeller, Meseritz, March 29th, 1869.

Notes on the food-plant of Lycana Corydon and Canonympha Davus.—With respect to the notices given in this periodical (vol. iii., p. 70 and 91) on this subject, I beg to make the following remarks.—

In the Stettiner Entomologische Zeitung for 1852, p. 125, I published a detailed natural history of L. Corydon, and stated that its food-plant is Coronilla varia. This is most certainly the case in the neighbourhood of Frankfort-on-the-Oder, Glogau, and Meseritz, where there is neither chalk nor Hippocrepis comosa. In the higher parts of Carinthia the latter plunt is likely to be fed upon by L. Corydon, for there the Hippocrepis grows in the greatest profusion in all the meadows where the butterfly occurs, and no Coronilla (excepting, I believe, C. Emerus). During the first years of my residence at Meseritz I saw no Corydon, and few plants of C. varia; but as the northern roadway became older, the plant became more frequent, thus last year, not far from the town, I was gladdened with the sight of a few Corydon, which no doubt had followed the spread of its food-plant.

I add a few words on the food-plant of *C. Davus*. In England it is stated to be *Rhynchospora alba*; I indicated a *Carex* with long and narrow leaves. It is possible that with us the larva may feed on the *Rhynchospora*, but this plant I have not as yet found only on one peat-swamp, which I have never visited in summer,

12 June

when the true C. Davus occurs in all our peaty moors and meadows. I imagine that in Britain the larva will feed freely on Carex, and it certainly will not die of hunger when supplied with any of the sharp grasses that grow on moors.—ID.

Observations on Plusia Ni (by Professor Zeller), translated from the Isis, 1847, p. 449.—As Treitschke correctly observes, Plusia Ni, when on the wing, has a great resemblance to P. Gamma, and it requires very sharp powers of observation to recognise the buzzing Noctua, by its grey colour, as Plusia Ni. Near Syracuse, on the 30th May, I took a wasted male in a fallow-field, where, when started up, it settled again to sleep on a vine-leaf, instead of buzzing at flowers, as is usual. Gamma sometimes settles again in the same way, and, indeed, I had almost passed this specimen for Gamma. In the neighbourhood of Catania I found specimens of the second brood, on the 3rd of July, in a moist meadow overgrown with rushes; they flew in the forenoon, and when I revisited the meadow a second time, I found them flying readily towards evening, and settling deep in the tufts of rushes, with the head downwards. At Messina I again observed this species, in the second half of August, where they were flying in the dry grass, and amongst Nepeta calamintha, on the heights of Castellaccio. One beautiful specimen I took from a small Asilus, which had already killed it.

Plusia Ni was, however, most plentiful on the border of a road near Naples, on the 20th of August; they were on this day particularly shy, more like Gamma, and whenever I approached them they went over a wall into a vineyard. I also noticed this species in the Campagna to the South of Rome, on the 28th August. This species, at any rate, seems no rarity in the southern part of Italy.

Its most characteristic markings are furnished by the sub-terminal line of the anterior wings and the central markings: the former shows between the 2nd and 3rd branches of the median vein, and between the last branches of the sub-dorsal vein two acute angles, which are open towards the base, and filled with black-brown, and it always bears on its anterior edge, in the interval between the branches of the sub-costal vein and between the 1st and 2nd branches of the median vein, short black-brown longitudinal streaks. The central marking is not silvery, but simply white with a faint gloss, and at the part which hangs on to the median nervure it is filled up with pale grey; the free part is oval, and more or less distinctly separated.

It is very remarkable, but in three male specimens this part is quite distinctly separated on the left wing, but not on the right: on the other hand, in one female the contrary takes place, and in no one specimen is there this separation on both wings.

The male is distinguished from every other species of Plusia, except circumscripta, by the abdomen. On each side of the 5th segment is a long, almost straight, pale reddish tuft of hairs, which projects but little from the abdomen, but strikes the eye very readily, so that one cannot help wondering how it was not mentioned by Treitschke: below this tuft on the 6th segment is a longer and thinner tuft, of which the tips of the hairs are black; usually these black tips are concealed in the anal tuft, but may be easily fished out with the setting-needle. As I had not observed these appendages, the object of which I am at a loss to conceive, in the fresh specimens, I am not confident that they are really attached the above-named segments. Probably other species possess this character in e male sex, and it might furnish a clue to a more natural grouping of the species.

Plusia Daubei, with which I am not personally acquainted, comes very near to Ni according to Freyer's figure (N. Beit. iii, p. 90, Tab. 256, fig. 1); on the atterior wings it shows the same markings of the sub-terminal line, but it wants no lower oval part of the Plusia-mark, and, on the other hand, has the peculiar eniform stigma as in P. Gamma. Boisduval says of P. Daubei (Index p. 159), that is smaller than Ni; but according to Freyer, it is almost larger than Gamma.

Description of the larva of Aporophila australis.—On October 5th, 1867, Mr.

Phomas Terry, of Babbicombe, gave Mr. Hellins some eggs of this species, laid by a septured  $\, \varphi \,$  about three weeks previously.

On Oct. 16th larvæ began hatching; they fed on *Poa annua* and other smooth grasses, and chickweed, and, being kept in a warm place (out of doors), did not seem to hybernate, but fed slowly through the winter, and by the end of January, 1868, were half-an-inch in length: from this time they fed and grew more rapidly till April, and all of them had gone to earth by the middle of that month. The moths appeared September 22nd to October 10th.

The egg is full and round in shape, with about 20 ribs, of which a third meet at the top, and the rest stop short in the angles formed by their junction, all connected by transverse reticulations; the ground-colour pale yellow, but splashed with purplish-pink.

The larvæ, when hatched, are greenish, with a blackish tinge on the back of the front segments, the head brown, the under-side paler than the back, the usual dots distinct, each furnished with a stiff bristle.

After a moult they become smooth, of a full green colour, with a darker dorsal line and a whitish sub-spiracular stripe, the folds showing yellow, and so they continue to near half-an-inch in length.

When this size has been attained varieties begin to develope themselves, some remaining wholly green with double purplish-red dorsal lines, while in others the sub-spiracular stripe becomes edged above with a spiracular line of purplish-pink.

At the next change the dorsal purplish-red lines open on the centre of each segment, disclosing a pale pinkish diamond, and the sub-dorsal faintly appears now as a fine double pinkish line.

The next moult produces a further development quite characteristic of the adult; the larva is now an inch long; in some the green of the back is of a yellower tint, and the sides a bright rose-pink; in others a brilliant grass-green, and sides purplish-pink; at this stage the dorsal line is flesh colour edged with pink or red, and on the front of each segment is a pair of short black marks placed obliquely, so that but for the dorsal line they would form a \( \Lambda \) with its apex pointing forwards: the sub-dorsal line is also marked with black at beginning of each segment; the sub-spiracular stripe yellowish.

The full-grown larva is one of the handsomest and most gaily coloured of the Noctum, is one inch five-eighths in length, rather stout and cylindrical, slightly tapered towards the anal tip.

The ground colour is now a very brilliant yellow-green, or in some individuals greenish-yellow; the head green freckled with reddish, a red, unpolished semi-

circular plate on the back of the second segment; on the back of each of the other segments is a red diamond, the front part of which for about a third of its length is black, through which runs the flesh-coloured or pale pinkish dorsal line edger with red, thus cutting what would be a black triangle into two black wedge pointing forwards; in the centre and sometimes hinder portions of the red diamond the dorsal line becomes often suffused with their colour. The sub-dorsal line black, but only at the beginning of each segment. The spiracles white placed in semicircles of black; and the space between them and the sub-dorsal line thickly freckled and streaked with deep red, appearing like a broad band of red along this side; the sub-spiracular stripe very pale primrose-yellow, its lower edge softence a little into the ground colour, and followed below by a blotch of red or pinkish or each segment; the prolegs tipped with the same colour; the ventral surface pale yellowish-green.

Var. 1. The ground colour a rather deep reddish-pink on the back and sides The freckled side band and dorsal diamonds of darker purplish-red, with all the other details as in the preceding.

Var. 2. Ground colour of the whole surface olive-green, but appearing on the back only at the beginning of each segment as a transverse narrow band, in which can be seen the pinkish-white dorsal line and the black wedges, though much shortened; the rest of each segment is covered by a broad, transverse, dark purplish-brown band extending to the spiracular region and hiding all other marks; each white spiracle in a large black blotch connected with a narrower blackish-brown transverse band on the ventral surface of each segment; the head, entire second and half the third segment, anal tip, and legs, also a faint spiracular line visible only on the anterior segments, are all of the olive-green ground colour.

The pupa is subterranean (but not enclosed in a hard cocoon), its shape is very cylindrical, tolerably even in bulk throughout, very smooth, but rather thicker in the middle, the tail ending with a small spike. Its colour a rich brown, and polished.—WM. Buckler, Emsworth.

Occurrence of Acidalia herbariata in London.—Three or four specimens of A. herbariata were taken last June, in the shop of a herbalist, in Holborn; two specimens, both males, are now in Mr. Bond's collection. One of the examples taken was a very worn female—on examining his stock, the only plant the herbalist could discover had been eaten was tansy.—E. G. Meek, Old Ford, May 1869.

Scoparia Zelleri in South Devon.—I have taken this insect in S. Devon for more than a quarter of a century; we used, when boys, to beat it occasionally out of hedges near Teignmouth, and then placed it next to Botys fuscalis. Growing wiser as we grew older, we called it Eudorea cembra, and as the female of this insect I always regarded it until the appearance of Dr. Knagga' monograph of the genus Scoparia. Any visitor to Teignmouth may capture Scoparia cembra commonly on the beach beyond the Ness Rock, sheltering amid the Eupatorium, which there grows abundantly, but Zelleri is only caught occasionally, either at light or by beating hedges.—R. C. R. JORDAN, 35, Harborne Road, Edgbaston, Birmingham: May 14th, 1869.

Pterophorus hieracii.—The readers of the Entomologist's Monthly Magazine will remember the discovery made of the larva of a species of Pterophorus on Teucrium

corodonia by Mr. Greening, of Warrington. On examining this with genuine pecimens of Pterophorus hieracii, sent by Professor Zeller to Mr. Doubleday, and by Ierr Mühlig to Mr. Stainton, it is evidently a quite different species; and next month, hope to describe it under the name of Pterophorus teucrii (Greening), taking advantage of the opportunity to give a short monograph on the nearly allied European species. I should feel very much indebted to any one who would in the mean time follect evidence as to the existence of the true hieracii in England, as also to those who have an opportunity of examining exotic collections, if they would kindly compare the Pterophorus teucrii with the P. marginellus of Zeller; this species I have never seen, and the description in Linnæa Entomologica, it must be confessed, agrees in many respects very closely with the proposed P. teucrii, especially in the ground colour of the wings 'brunneo fuscus,' and in its having the "linea in ciliis costæ ante apicem tenuis nivea." Any Entomologist clearing up these two points would confer an obligation on me.—Id.

New locality for Aryprolepia wneana.—On the 1st June, 1868, I took a specimen of this Tortrix in a wood between Herne and Canterbury, about two miles from the former place.—J. W. Downing, Vauxhall Bridge Road: April 25th, 1869.

Worcestershire captures of Lepidoptera in 1868.—This account of my doings in the past season may perhaps interest some of your readers.

March 2nd, A. prodromaria, 3 bred; T. populeti, 3 bred; T. munda, 4 bred. April 4th, X. conspicillaris, already recorded, 1 bred. April 19th to May 10th, T. extersaria, 15 bred. April 19th, P. palpina, 4 bred; 27th, A. berberata, 6 bred. May 8th to 20th, C. ocularis, 12 bred; 19th, E. heparata, 2 bred; E. plumbeola, 2 bred; 20th, H. genistæ, at sugar, 6; H. suasa, at sugar, 1; A megacephala, 2 bred; 28th, T. extersaria, 2, beating; L. hexapterata, 6, beating; C. mesomella, 1, beating; M. Artemis, several; L. sinapis, several. June 1st, E. decolorata, 2, beating; E. heparata, 2, beating; C. propugnata, 4, beating; B. pandalis, 1, beating; A. plagiata, 2, beating; 2nd, C. bifida, 1 bred; 10th, S. undulata, 1, beating; S. apiformis, 27 bred; A. luteata, 2, beating; E. lariceata, 4, beating at the Trench Woods, and 2 in my garden, where larches are growing; E. porata, 2, beating; 15th, A. advena, at sugar, 4; 15th to 25th, C. porcellus, at flowers, 9; 16th, A. corticea, at sugar, 1; 18th, A. rubidata, 1, beating. July 2nd, C. quercana, 1 very fine, stamped it out of an oak; M. miniata, 4, beating; A. tumidella, 3, beating; N. roborella, 1, beating; 7th, C. offinis, at sugar, 1; 11th to 27th, T. betulæ, 22 bred from 25 larvæ taken off Prunus spinosa; 3 of the number having been stung. Seven males appeared before any female ventured out of the pupa. Every season for the last ten years I have bred this species, and have always found the males first to emerge. August 3rd, C. nupta, 5 at rest; 8th, H. sylvinus, 1 at rest; she laid some white eggs, which upon the following day became perfectly black; 13th, C. cytherea, at sugar, 3. September 5th, A. lunosa, 6, at sugar; 19th, X. aurago, 1, at sugar; C. miata, 3, at rest; 22nd, larvæ of C. furcula. October 9th, larva of E. orbicularia. The last four seasons I have searched carefully for larvæ of this insect, but I have only succeeded in taking one each season; 15th, V. Atalanta, a singular variety of this species I captured in my garden. The margins of the under-wings are bright yellow instead of scarlet, and there is a profusion of hair around the body near the inner margins, light brown and white.—ABRAHAM EDMUNDS, Cemetery House, Astwood Road, Worcester, May, 1869.

Do birds eat the larve of Cucullia?—A paper was read on the 1st March, at the Meeting of the Entomological Society of London, "on the relations between t Insects and Insectivorous birds," by Mr. J. Jenner Weir.

This paper broaches a theory founded on certain experiments by Mr. Weir, which theory is so opposed to what I have observed to take place in Nature that I must suppose either that the birds upon which he made his experiments reject, in confinement, food which they would partake of if at liberty, or that some birds will eat certain larvæ which may be distasteful to others.

I will simply refer to his theory of coloured larvæ, as instanced by the genus : Cucullia, being rejected by birds.

I have for many years grown Verbascum thapsus, the food-plant of Cucullia verbasci, as well as several other food-plants of the genus, in my garden, to attract the moths.

I have some years had hundreds of larvæ of *C. verbasci* which fed up to a certain size, but as soon as they begin to show colour and size, and appear on the upper side of the leaves and on the stems to partake of the flowers, down come the birds and off go the larvæ.

The same thing has happened with Cucullia absinthii, much to my annoyance

I therefore cannot feel so satisfied as Mr. Weir expresses himself to be, that "as a general rule birds refuse to eat gaily coloured larvæ."—H. D'ORVILLE, Alphington, May 4th, 1869.

Capture of Deilephila lineata at Folkestone.—A good specimen of D. lineata was brought to me on the 7th inst. A boy found it at rest on the grass in "the Warren."—Henry Ullyett, Folkestone, May 10th, 1869.

Deilephila lineata in Gloucestershire.—The other day the remains of a large moth were brought to me, which I had not much difficulty in determining as D. lineata. It was taken last autumn at Great Risington, about four miles from this place, and when caught was in first-rate condition. It was in the school-room window of the clergyman's house, and a bird was pecking at it from the outside. When brought to me, the remains consisted of a portion of the body, and one hindwing and a half!—E. Hallett Todd, Aldsworth, Gloucestershire, April, 1869.

Note on Eriogaster lanestris.—In the summer of 1866 I had larvæ of this insect, about 100 of which went to pupæ. The dates at which they have emerged are worth noting:—1867, first moth on February 2nd; 1868, February 20th; 1869, April 6th! There are some yet in pupa; when may they be expected next year?—ID.

Sericoris euphorbiana bred.—This morning, on looking into my breeding-cage, I was pleased to find that a fine specimen of this species had emerged from a pupa obtained from larvæ collected by me at Folkestone, in September last.—HOWARD VAUGHAN, Kentish Town, 3rd April, 1869.

Nyssia hispidaria at Hampstead.—A few weeks ago I captured a large male of N. hispidaria on a fence at Hampstead, where I have often searched for that species without success.—ID.

Eupithecia consignata bred.—I have bred six fine specimens of E. consignata in the last few days, from eggs kindly sent to me last spring by Mrs. Hutchinson, Grantsfield. I have entirely failed in getting them to pair.—H. Harpur Crewe, byton Beauchamp, May, 1869.

The late Dr. L. Imhoff's Works, Manuscripts and Collections.—The November mber of this Magazine contained an obituary notice of Dr. L. Imhoff, and there I shortly appear in Switzerland a "Necrolog" of the same naturalist from the of Professor C. L. Rütimeyer.

In connection therewith the following memoranda may be of some interest, d, in publishing them, I hope to meet with the approval, not only of the respected ther of the "Bibliotheca Entomologica," but of all those who are agreed that the interest of science it is the duty of the survivors to preserve an exact record the work done by those who have died at their post.

PUBLISHED WORKS.—To the almost complete list up to 1862, in Dr. Hagen's ork, there are to be added—

"Catalogus Piezatorum (Hymenopterorum) circa Basileam nec non in aliis elvetiæ regionibus repertorum." Basilea, 1 fol. (1838?).

"Sammlung ausländischer Käfer und Schmetterlinge in naturgetreuen Abbilungen von T. D. Labram. Mit Text von Dr. L. Imhoff." 1838. Basel, 8vo; 2 umbers, each with 4 pages text and 4 plates, some of which are coloured Papilio Doreus, Erippus, Bolina, et Diaphanus; Syntomis Lethe, Procris Lichas; torwa Horta; Passaius Heros; Catoxantha angusta; Chrysochroa wanthotenia).

Lacordaire's notice of a "Heft" No. 19 of the "Singulorum generum Curulionidum," is correct (compare Hagen, Bibl. Ent. I, p. 401). The aforesaid sublications are in my possession. Labram's original pencil drawings to Dr. (whoff's work about the Curculionidu are also in my hands, as well as many chose of the "Insecten der Schweiz;" but what has become of the remainder of the atter, particularly of the finely executed drawings of the Diurnal Lepidoptera, I am not able to state at present.

# MANUSCRIPTS .- Of these I have secured-

"Ludovici Imhoff Dissertatio, in qua insecta nonnulla succino inclusa describuntur et figuris illustrantur," etc. 4to; ann. 1 tab. (8 Diptera, 1 Phryganea, 1 Termes, and 1 Chrysomela, from the Public and Bernoullian Collections at Basle).

"Kirby's Arten des Genus Bombus" (a critical comparison of Kirby's with continental species). No date.

"Europaeische Arten des Genus Bombus in der Hellwig-Hoffmanseggischen Sammlung." No date.

Collections.—Dr. Imhoff's first and most complete one, combining all orders of Swiss insects, with the types of the species described by him as new, was bought, many years ago, by Professor L. Agassiz, for the Museum of Comparative Zoology in Cambridge, Mass. (see Hagen, Stattin. Ent. Zeitung, 1868, p. 115).

Swiss entomologists will not fail to appreciate the fact that this collection (together with other European ones) is now under the care of Dr. Hagen himself; and it is to be hoped that this coincidence will be in due time made use of to settle the many open questions, particularly in the order of the Neuroptera taken in the Linnaun sense.

A very large assemblage of (mostly exotic) beetles, including the majority of the Curculionides described by Dr. Imhoff, has been acquired by Andreas Bischoff Ehinger, of Basle, to whose liberality and studiously neat collection the former, of more than one occasion, owed the means of continuing his works.

A second general collection has been deposited in the Public Museum at Basle, and I would here express my hope that every Swiss specimen belonging to it may be carefully preserved, if possible, with Dr. Imhoff's own labels, to enable workers to use the insects as types, as it would be rather a round-about way to have to get information on that head from America.

The library of Dr. Imhoff has been dispersed.—Albert Müller, Penge, S.E., April, 1869.

The late Mr. Edward William John Hopley .- This gentleman, whose name will be familiar to our readers, died at his residence, No. 14, South Bank, Regent's Park, London, on the 30th April, at the age of 53. Intended by his friends to follow the profession of medicine, Mr. Hopley was, in early life, articled to a surgeon at Brighton; but he soon relinquished that profession for the, to him, more congenial one of an artist, in the exercise of which he had attained no small degree of celebrity, and he was always ready to acknowledge the assistance to his art-career which his early anatomical studies had afforded him. For many years he had been an assiduous collector of British Lepidoptera, and turned his attention especially to the subject of variation, on which he largely experimented, by subjecting certain larvæ to forced diet and unusual conditions. As our pages will show, he was a genial writer and minute observer. And he will long be remembered by a large circle of friends for his unvarying courtesy; an evening spent with him in his studio, surrounded by a combination of the beautiful works of art and nature, was an event not likely to be soon forgotten by the numerous entomologists who enjoyed that privilege. About two years since, Mr. Hopley was attacked by an insidious renal disease, of a kind that has hitherto baffled all medical skill, and though he retained his habitual happiness of disposition up to the last, he knew that, sooner or later, he must succumb to its ravages; yet only a short time before his death he had occupied himself with a re-arrangement of his collection in a new cabinet, scarcely anticipating apparently that the end was so near. One or two of his most beautiful pictures received the artist's finishing touches only a few days previously to his demise.

# Rebiew.

THE INSECT WORLD, being a popular account of the Orders of Insects; by Louis-FIGUIER; second edition, revised and corrected by E. W. Janson. London: CHAPMAN & HALL, 1869.

Those who desire a popular treatise on general Entomology, profusely illustrated, cannot do better than supply themselves with this English translation of Figuier's "L'Insecte." The writer belongs to the class of "book-makers" with whom we have little sympathy, yet a careful compilation from trustworthy sources is often better than original works by superficial observers, such as we too frequently see; and M. Figuier appears to have had good advisers as to the books he should consult. One portion, at least, of the English translation is likely to be free from striking errors, as the second edition has been entrusted to a gentleman

e extensive knowledge of Coleoptera is indisputable; and the rest seems toleraorrect. The illustrations are, as a rule, well engraved; yet many are very
being of the well-known unnatural French type, and the worst are those
from older authors, which seem to be pressed into their service by all French
lar writers on insects with such accurate copying, that one is almost induced
ney that the same wood-blocks do duty in rival publications. The work is
lsomely got up, and will no doubt form an attractive ornament on many drawingtables.

In tables.

We cannot refrain from remarking on the low price at which these French is are published, as compared with similar English ones, though the demand he other side of the Channel can scarcely be greater than here. The secret in the cost of production, and it is a humiliating fact that the artistic work of solume like this can probably be done on the Continent for almost a tithe of what could cost in England. Even printing in the English language can be executed ome of the large German towns at a far lower rate than at home, and on equally d paper. We say this in no disparagement of an enterprising class of artizans: difficulty remains to be solved by the political economist.

ENTOMOLOGICAL SOCIETY OF LONDON, 3rd May, 1869. H. W. Bates, Esq., i.S., President, in the Chair.

C. O. Waterhouse, Esq., Assistant in the Zoological Department of the British seum, was elected a Member.

Mr. Stevens exhibited a large collection of Chinese Coleoptera.

Mr. Butler mentioned that the West African Conocephalus, exhibited by him the Meeting on the 15th February last, was still alive, though it had eaten

Professor Westwood exhibited, and remarked upon, several species of Ephyris d other Hymenoptera of doubtful position, including an example of Calyoza ephylinoides, Hope, taken at large at Natal, the species having been originally scribed and figured (Trans. Ent. Soc. 1st series, vol. ii, p. 56, pl. 7, fig. 11), from example enclosed in Gum Animé.

Mr. Horne read some observations on the habits of various Indian insects.

Mr. F. Smith exhibited both sexes of a *Cynips* sent to Mr. Darwin by Mr. alsh, as recorded in the last number of this Magazine (vol. v, p. 298). Conning this most interesting discovery we give the following extract from Mr. alsh's paper in the "American Entomologist" for February, 1869:—

"The true 'Oak-apple,' as it is popularly called, occurs exclusively upon the lack Oak (Quereus tinctoria). It commences its growth in May, or as soon as the comp leaves put forth, and reaches its full size in a few weeks. The central cell, a which the larva resides, becomes eventually hard and woody, but the space etween that cell and the external skin or rind of the gall is always completely likel by soft, drab, spongy matter. By the fore-part, or middle, of June, both nale and female gall-flies (Cynips Q.-spangifica, O.S.) eat their way out of a certain umber—say about a fourth part—of these galls. The remaining larvae lie dormant or more than two months, when they change into the pupa-state, and subsequently, bout October, cat their way out in the form of gall-flies (Cynips Q.-acicudata, O.S.),

20 [Jan

closely allied to, and yet quite distinct from, those produced in June. Out a thousands of these autumnal flies examined by us, all were females, with not single male among them; and we have experimentally ascertained, by colonizing number of these females upon isolated black-oaks known to be not previous infested with oak-apples, that they cause apples to be generated in the following spring upon such isolated oaks. From oak-apples produced in this manner we have bred two specimens of the spring form (Q.-spongifica) of gall-fly which exists in both sexes, and five specimens of the autumnal form (Q.-aciculata) which exists exclusive in the female form. Finally, treating these five autumnal specimens in the sam manner, i. e., placing them upon another isolated black-oak, we obtained galls i the following spring which produced two specimens of the spring form (Q.-spongifica) thus showing that the autumnal form sooner or later reverts to the spring form Hence, as well as from other considerations, we may infer that the former is not distinct species, but a mere dimorphous female of the latter; for otherwise on form could not generate the other. The bastard oak-apple matures like the pre ceding in June, but is found exclusively upon the red-oak (Quercus rubra). 1 differs from the preceding in never reaching so large a size, in the central cell no being woody, but consisting of a mere shell which can be readily broken with th thumb-nail, and in its being only connected with the external rind by slende radiating filaments. Males and females (C. Q.-inanis) absolutely indistinguishabl from the spring form of the preceding species, are obtainable from this gall i June; but after repeated trials we have never succeeded in breeding from it single autumnal female, and we do not believe that any such form exists. Hence and also in consequence of the very great dissimilarity of the galls, and their always growing upon distinct species of oak, we are compelled to consider these two gall-flies as distinct species, although when placed side by side the form generated in the spring are always exactly like each other."

Mr. McLachlan exhibited all the forms of a small species of Termes brough from St. Helena by Mr. Melliss, and being the same to the ravages of which, in that island, Mr. Layard called the attention of the Society in 1866 (Trans. Ent Soc. 3rd series, vol. v, Proc. p. xii). Mr. Layard stated that the insect had been introduced in timber from the Coast of Africa, but Mr. McLachlan could no identify it with any described African species, and was inclined to consider it the T. tenuis of Hagen, which inhabits the West Indies and Brazil. Considering tha St. Helena is a place of call for vessels from all quarters, there is no reason why i should not have originated from the West; though one would naturally look to Africa as its home, and from this cause he was inclined to think that the idea o its coming from thence had originated. It is an anomalous species in its structure in which it agrees with T. tenuis. Mr. McLachlan also exhibited a large number o small black Podure placed in his hands by Mr. Henry Lee, and concerning which it was stated that they had been found at Hungerford, on the 10th April, on the surface of a duck-pond, which they covered to such an extent as to give the idea that a bag of soot had been emptied over it.

Mr. A. R. Wallace read "Notes on eastern Butterflies (Diadema)."

Mr. Butler read "Descriptions of a new or little known forms of Diurna Lepidoptera." EW SPECIES, &c., OF HEMEROBIINA; WITH SYNONYMIC NOTES (FIRST SERIES.)

BY R. M'LACHLAN, F.L.S.

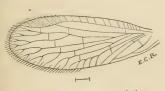
#### FAMILY OSMYLIDÆ.

CLIMACIA, n. g.

Antennæ moniliformes, alis paulo breviores; articulo basali bulboso. selli nulli, occiput fornicatum; frons triangularis; labrum excisum; xillæ (?) setis duabus elongatis rectis instructæ; palporum maxillarum iculus ultimus quarto paulo longior, subulatus. Prothorax elongatus, pite angustior. Abdomen vix robustum, ad apicem attenuatum; minæ terebrá rectá, sursum directá, instructum. Pede sgraciles; tarsorum ticulo 1º elongato, 2º et 5º brevioribus, æqualibus, 3º et 4º brevissimis; gues parvi, simplices; plantula parva. Alæ ovatæ, ad apicem obtusæ; ticarum subcosta et radius sub-paralleli, distantes, ante apicem conjuncti, erostigmate dilatato; area sub-costalis venulá transversali singulá basali structa; furculæ marginales apicales duplices, dorsales simplices; venus paucæ, seriebus duabus gradatim dispositæ, cum venis robustæ, ciliatæ; mbriæ breves: posticæ fere anticas simulantes.

Type: Micromus areolaris, Hagen, North Amer. Neurop., p. 199.

This curious little insect evidently belongs to the Osmylidæ in the ense defined by Brauer; and Hagen, in his "Synopsis synonymica," had lready placed it doubtfully in the genus Sisyra, at the same time indiating that a new genus should be formed for its reception. From



Anterior wing of Climacia areolaris.

Sisyra it differs in the presence of a veinlet at the base of the sub-costal area, and of two well-defined series of gradate veinlets; also in the elongated prothorax, and long triangular face. I have indicated the

presence of two curious setiform organs, apparently connected with the maxillæ, but am by no means sure of their actual position and relationship.

Hagen received the insect from Florida (March); I possess a pair from Bosque County, Texas, taken by Mr. Belfrage (in August). It is probably aquatic in its earlier stages.

#### FAMILY HEMEROBIIDÆ.

#### DREPANEPTERYX BEROTHOIDES, n. sp.

§ . D. griseo-flavescens. Caput thoraxque utrinque fusco-nigri: a tennæ flavæ, nigro-annulatæ. Pedes flavo-albidi, fusco-signati. Alæ a gustæ: anticæ margine costali prope basin valde elevato, in medio la exciso; apice longè falcato; margine apicali sub apicem latè exciso griseo-fuscæ, marginibus venisque longitudinalibus nigro-punctatis; settores sex: posticæ albido-hyalinæ, latè fusco-limbatæ.

Long. corp. 3"; exp. alar. 10".

Hab. Australia.

Head and thorax dull greyish-yellow, the sides above blackish; face shining yellowish, suffused with blackish; antennæ yellow, narrowly annulated with black; patpi blackish. Legs whitish-yellow; anterior and intermediate femo and tibiæ strongly spotted with black; posterior femora internally with a lor fuscous cloud; apical joint of all the tarsi blackish. Abdomen fuscous, paleneath.

Wings long and narrow: anterior pair with the costal margin very narrow at bas then, near the base, strongly and roundly elevated, afterwards very longly ar shallowly excised; apex produced into a long curved hook, the margin belo the apex deeply excised; colour greyish-fuscous, with a darker transver cloud before the apex; costal margin regularly dotted with black and yellowis apical margin (excision) narrowly blackish, with pale whitish-yellow space costal veinlets, radius, and sectors yellow, strongly dotted with black; si sectors; two series of gradate veinlets, of about six each, placed very obliquel and parallel; cellule at base of costal area long, occupying nearly the whole of the very narrow base of the area: posterior wings with the apical margin longly excised; whitish hyaline, apical and dorsal margins with a very broad smoky fuscous border, extending nearly to the base, hence the hyaline groun is reduced to an oval basal space; veins pale yellowish in the hyaline portion and blackish in the rest.

A very peculiar species, with the facies of the Indian and American forms of Berotha; differing widely on the one hand from the European D. phalænoides and the Indian D. falculoides, and on the other hand from the Australian and New Zealand group represented by D. bino culus and its allies, yet agreeing structurally sufficiently well to admit of its being considered generically identical. Lent to me by Mr. Walker.

#### HEMEROBIUS PERPARVUS, n. sp.

H. rufo-fulvus, fusco-nigroque varius. Antennæ flavæ, ad basin fuscoannulatæ, ad apicem nigricantes. Pedes flavi, tarsis anticis intermediisque nigro-annulatis. Alæ albido-hyalinæ: anticæ griseo-guttatæ; venæ venulæque albidæ, fusco-punctatæ, pilis longis, erectis, nigris, ciliatæ; sectores duo.

Long. corp.  $1\frac{1}{4}^{""}$ ; exp. alar.  $3\frac{1}{4}^{""}$ .

Hab. Texas. In coll. auct.

and thorax reddish-fulvous, the latter varied with black above. Antennæ yellow, obscurely annulated with fuscous, the apical portion totally blackish: palpi piecous. Abdomen yellowish, clothed with concolorous hairs; in the male the last ventral segment is produced into a short, triangular, yellow, ciliated borer-like appendages. Legs whitish; anterior and intermediate tarsi annulated with blackish.

gs whitish hyaline: anterior pair with numerous small rounded grey spots, which are very conspicuous along the inner margin; veins whitish, with minute fuscous dots, from each of which arises a long erect blackish hair; margins longly ciliated; two sectors; five veinlets in the inner gradate series, four in the outer.

I received three examples of this very minute and delicate species m Mr. G. W. Belfrage, by whom they were taken in Bosque County, xas, in September.

# FAMILY CHRYSOPIDÆ.

CHRYSOPA EXUL, n. sp.

C. flavo-viridis. Caput punctis quinque rufescentibus (quorum duo nud verticem, unum inter antennas, unum ad genam utramque) signatum. rothorax superne punctis quatuor, utrinque lineá his paullo inferá, nigris, rináque mediá transversali, utrinque rufescenti, instructus. Ungues ad usin valde dilatati, apicibus valde incurvatis. Alæ latæ, venis venulisque nnino pallidè viridibus; anticarum cellula tertia cubitalis ut in C. ulgari.

Long. corp. 5"; exp. alar. 13".

Hab. in insula Sanctæ Helenæ. In coll. auct.

iellowish-green. Head with five small reddish dots, whereof one is placed on each side of the vertex, one between the antennæ, and one on each cheek. Palpi fuscescent. Antennæ yellowish at the base, afterwards brownish, the basal joint very strongly inflated. Prothoraæ with a strongly raised median transverse ridge, on each side of which is a small reddish dot; the sides oblique in front; a black spot at each angle above, and a black longitudinal line on each side a little inferiorly. Meso- and meta-thoraæ unspotted. Abdomen greenish, with a fuscous dot on each side of the base above. Legs whitish, the tarsi reddish-brown; claws strongly dilated at the base, afterwards with the apices greatly incurved.

Wings broad, scarcely acute at the tips, hyaline and iridescent, veins and veinlets all greenish, ciliated: the third cubital cellule in the anterior wings as in C. vulgaris.

I possess one example, brought from St. Helena by Mr. Melliss, who also collected two specimens of another *Chrysopa* in the same island, which do not seem sufficiently distinct from the abundant European *C. vulgaris*, already reported from Madeira and Mauritius.

#### CHRYSOPA PUNCTINERVIS, n. sp.

C. flava, brunneo-varia. Caput vittis quatuor, longitudinalibus, bil neis, apud verticem signatum; fronte brunneo-vario, genis maculà elong nigrà utrinque ornatis. Palpi flavi, læte nigro-annulati. Anten brunneæ, basin versus flavidæ, articulo basali supernè lineà brunneà sign. Thoracis vitta lata utrinque, lineaque mediana angusta, necnon abdommaculæ dorsales plurimæ, brunneæ. Pedes albidi, femoribus ad apibrunneo-semi-annulatis: ungues simplices. Alæ vix latæ, ad apicem tundatæ, hyalinæ; venæ venulæque albidæ, regulariter nigro-puncta anticarum cellula cubitalis tertia ut in C. septempunctatå.

Long. corp. 3-4"; exp. alar. 9-10".

Hab. in Texas. In coll. auct.

Pale yellow. Head: vertex with four longitudinal brown lines, the two mic ones longer than the outer, and slightly interrupted; a small brown \( \forall \)-sha spot between the antennæ, and a brown line on the basal joint of latter: front varied with brown, and with an elongate black spot on each che Palpi yellow, broadly annulated with black. Antennæ brownish, the br portion yellow. Thorax yellow, with a very broad brown stripe along each s and a narrow median line, which is most evident on the prothorax. Abdor yellow (that of the female much dilated), with numerous, more or 1 confluent, brown spots along the back. Legs whitish, with short black hairs; femora with a black spot internally at the apex; claws simple.

Wings rather narrow, the apex rounded, hyaline; veins and veinlets whitish, (excepting the radius, which is wholly pale) with regular tuberculated bladots, from each of which springs a short blackish hair; pterostigma rat long, dirty yellowish: third cubital cellule of the anterior wings as in C. s tempunctata.

I have two 3 and one 2 of this, collected in Bosque Coun Texas, in summer, by Mr. G. W. Belfrage. It is remarkable for tregular punctuation of the neuration, as ordinarily in *Chrysopa* this entirely pale or dark, or with black spaces only at the two ends of earnervule.

#### CHRYSOPA NIGRA, n. sp.

C. albida, nigro-varia. Caput maculis duabus magnis verticalibus, lin supernè ad basin antennarum, lineisque tribus in fronte, nigris signatur antennæ nigro-fuscæ, pallido-annulatæ; palpi fuscescentes. Prothorax ebidus, nigro-ciliatus, margine antico punctisque lateralibus nigris. Mesometa-thorax albidi, nigro-varii. Pedes albidi, femora maculâ extus ar apicem nigrâ signata; tibiæ nigro-bi-annulatæ: ungues breves, curva simplices. Alæ hyalinæ, angustæ, venis venulisque (præter nonnullas medio albidas) nigris: anticarum cellulæ cubitalis tertiæ venula separa venulæ transversali superpositæ æqualis. Long. corp. 3½"; exp. alar. 9".

Hab. in insula Antonio (Cape de Verdes). In coll. auct.

whitish, the vertex flattened, and almost entirely occupied by the large lack spots which are scarcely separated by a narrow median line; a black ne at the base of the antennæ; front with three transverse black lines, one road and angulated in the middle, below the antennæ, a second on the clypeus, and the third occupying the labrum. Palpi slightly fuscescent. Antennæ black, narrowly annulated with whitish; the basal joint short, blackish above, whitish beneath. Prothorax broader than the head, whitish with black hairs, the anterior margin narrowly black, and with irregular black spots on the sides. Meso- and meta-thorax strongly suffused with blackish, the scutellum of each pale. Abdomen blackish (colours probably changed in drying). Legs whitish, longly ciliated; a blackish spot externally near the apex of the femora; tibiæ with two blackish rings, one near the base, the other near the apex; claws very short, simple, curved.

as narrow, hyaline; sub-costa and radius whitish with black lines, the rest of the veins and veinlets black, with occasionally a pale median space: anterior wings with eight transverse veinlets between the radius and its sector; four areoles between the two gradate series; the dividing veinlet of the third cubital cellule equal with, or scarcely exceeding, the transverse veinlet above it.

I have one example of this peculiar species collected by Mr. V. Wollaston in Antonio, one of the Cape Verde Islands.

#### NOTHOCHRYSA EVANESCENS, n. sp.

N. pallide albida. Antennæ griseæ, articulis duobus basalibus pallidis. protum utrinque linea irregulari fusca signatum. Alæ hyalinæ, latæ; rostigmate elongato, pallide flavescente: anticæ venis longitudinalibus lidis; venulis costalibus fere totis, venulis gradatis, necnon venulis interlium et sectorem, furcularum marginalium axillis sectorisque dimidio icali, nigris: posticæ venulis gradatis, furculis marginalibus, sectorisque midio apicali, nigris.

Long corp. 6"; exp. alar 23½".

Hab. Sarawak in insula Borneo. In Mus. Brit.

tally very pale whitish with a tinge of yellow. Antennæ grey, except the two basal joints. Pronotum with an irregular fuscous line on each side. Claws slightly dilated at the base.

ings broad, hyaline, iridescent; pterostigma elongate, very pale yellowish, with a small blackish dot at the inner end: anterior wings with the longitudinal veins pale yellowish; costal veinlets (except in the pterostigmatical region) black with a pale space in their lower half; the apical half of the sector, the gradate veinlets, those between the sector and radius, and the basal portion of the marginal forks, also black; sector emitting 22 branches; dorsal marginal veins simple up to between the gradate series, afterwards simply furcate: posterior wings with all the veins and veinlets pale, excepting the apical half of the sector, the gradate veinlets, and the marginal forks, which are black.

One example in the collection of the British Museum, presented y Mr. Saunders; collected by Mr. A. R. Wallace, at Sarawak.

#### Nothochrysa ferruginea, n. sp.

N. rufescens. Caput nitidum, rufo-aurantiacum; antennæ nigro-fui articulis duobus basalibus rufescentibus. Pronotum rufo-aurantiacum, teulis quatuor nigris signatum. Pedes flavescentes, geniculis nigro-punete Abdomen ochraceum, suprà nigro-maculatum. Alæ hyalinæ; pterostigm elongato, rufo-ochraceo: anticæ venis longitudinalibus pallide flavis; vem costalibus plerumque, gradatis, cubitalibus, nonnullisque inter radium sectorem, nigris; posticæ venulis costalibus venulisque inter sectorem et radi in parte, gradatisque omnino, nigris.

Long. corp. 5"; exp. alar 18"s

Hab. Sarawak in insula Borneo. In Mus. Brit.

Roddish. Head reddish-orange, polished; eyes bluish-grey; antennæ black fuscous, the two basal joints reddish-orange. Prothorax transverse, ab with a longitudinal impressed line in the middle, anterior angles oblic four large black spots, one at each angle. Mesothorax above with a nar black line on each side in the front, above, following the course of the antersutures. Legs pale yellowish with a black mark at the knees; claws dila at the base. Abdomen ochreous, spotted with black above.

Wings hyaline, highly iridescent; pterostigma elongate, slightly reddish: anterwings with all the longitudinal veins pale yellow; costal veinlets (except the near the pterostigma), gradate veinlets, inter-cubital veinlets, entirely, those between the radius and sector at the two ends, black; sector emitt 18 branches; dorsal marginal veinlets simple as far as the inner grad series, afterwards simply furcate; a black dot at the extreme base of radius in each wing: posterior wings with the costal veinlets at the begradate veinlets wholly, and those between the sector and radius at the begladate.

One example in the collection of the British Museum, present by Mr. Saunders; taken by Mr. A. R. Wallace, at Sarawak.

Notes on species described by Mr. F. Walker in the Trans. E Soc., Lond., vol. v. (new series), part 5, p. 182-186.

Genus Varnia, Walker = Ithone, Newman. V. perloides is interesting second species of this curious genus.

Osmylus punctipennis, Walker, may be retained in the genus if the present, but is aberrant; area costali seriebus 5-2 areolarum.

Chrysopa ignobilis, Walker-a true Chrysopa.

C. pubicosta, Walker, belongs to Osmylus as a slightly aberrant for C. mozambica, Walker = Nothochrysa variegata, Burm., with which

V. mozambica, Walker = Nothochrysa variegata, Burm., with whit N. rufostigma, McLach. (Journ. Linn. Soc. Zool. vol. ix, p. 253), is al identical. The native country of the allied N. aqualis, Walker, is Inc. and Malacca.

Apochrysa beata, Walker, is allied to A. marionella, Guérin, but smaller, and without the dark cloud in the fore-wings.

Drepanepteryx falculoides, Walker, is closely allied to D. phala-

Hemerobius decisus, Walker, might be placed provisionally in Megacus; but it will form a distinct genus, which I propose to call
uronema, of which I will say more hereafter, giving here the
lowing preliminary diagnosis:—Alæ anticæ sectoribus (in N. deciso)
elecim, quorum sex e radio emittuntur, reliqui ex uno illo parallelo.

H. setulosus, Walker, is a true Megalomus.

H. tasmaniæ, Walker, is a Micromus; I have seen it from several its of New Holland, and possess two individuals from New Zealand, ich differ only in the rather greater amount of spotting on the us, and with these more strongly ciliated; a comparison of an existive series from both quarters will be requisite to prove the identity distinctness of the two forms.

Lewisham, May, 1869.

# DIAGNOSES OF THREE NEW SPECIES OF CALOFTERYGINA. BY R. McLachlan, F.L.S.

As Baron de Selys-Longchamps is about to publish a second ditional Synopsis of the Dragon-flies belonging to this family, I take ne opportunity of diagnosing three beautiful undescribed species from my own collection, as under:—

#### SAPHO ORICHALCEA, n. sp.

S. viridis, metallica, infra (cum pedibus) nigra. Alæ latæ, ad apicem otundatæ; posticæ (præcipue in maris) valde dilatatæ: in ¿adulto nigræ, pacæ, orichalceo-micantes, nigro-venosæ, venå costali viridi, metallicå; oterostigmate nigro: in ¿immaturo fuliginoso-sub-hyalinæ, orichalceo-nicantes; pterostigmate flavo: ♀, sub-hyalinæ, flavo-brunneo-tinctæ; fasciå medianå, cunciformi, paullo curvatå, flavescenti, vel (immaturå) albidå; pterostigmate flavo, nigro-circumcincto.

Long. abdom. 3 24". 2 22"; exp. alar. 3 41", 2 37",

Hab. Africa occidentali (et Madagascar?).

Remarkable for the very broad wings, and for the transverse fascia of all the wings in the 2, which is placed immediately after the nodus, and is broadest on the costa. I have not seen an example with the abdomen in good condition. In my own collection from Fernand Vas, West Africa, almost on the equator; in De Selys' collection from Old Calabar; and in that of the British Museum (a pair from Mr. Saunders) labelled "Madagascar," but this locality seems very doubtful. The

wings of the adult male show traces of small, irregular, whitish dots is frequently the case in black species of this family, and which se to result from non-development of the black pigment.

#### THORE VICTORIA, n. sp.

T. nigra, thorace utrinque flavo-quinquelineato. Alæ flavo-albio ad apicem late (intus concaviter) chalybeo-nigræ, anticæ strigð obliq medianá brunneå; posticæ fasciá medianá brunneå; pterostigmate dilatæ nigricante (3).

Long. abdom. 25"; exp. alar. 46".

Hab. Bolivia.

Differs from all other species in its great size, by the black apic third of the wings being regularly concave internally, and by the brot transverse median fascia of the hind-wings. I possess one male of the magnificent species.

#### THORE BEATA, n. sp.

T. nigra, thorace flavo-quinquelineato, infra griseo-albido. Cap flavo-maculatum. Pedes nigri; femoribus intus ad basin brunneis. A domen utrinque ad basin flavo-lineatum. Alæ hyalinæ, vix (adulti) fuce centes, nigro-venosæ: posticæ maris (adulti) fasciû latû ante mediw opacû, lacteo-flavû, vel (immaturi) lacteû; foeminæ (adultæ) fasciû m dianâ angustû, flavû, opacû, extus fusco-limbatû, vel (immaturæ) lacteû pterostigmate nigro vel nigro-fusco.

Long. abdom. ₹ 17-18", \$ 15-16"; exp. alar. ₹ 29-31", \$ 29-32".

Hab. Pebas.

Remarkable for its small size, and for its hyaline anterior wings and the opaque transverse whitish fascia of the inferior wings. I have seen many examples, collected by Mr. J. Hauxwell, at Pebas, on the Upper Amazons.

Lewisham, London, 13th June, 1869.

# DESCRIPTION OF A FINE NEW CHARAXES FROM AFRICA.

BY ARTHUR GARDINER BUTLER, F.L.S.

The following species is from the collection of T. P. Dossetor, Esq. and forms part of a set of West African insects which the late Mr. Edward Doubleday, some years since, was very anxious to procure for the National Collection.

#### CHARAXES ZELICA, n. sp.

 $\ensuremath{\mathfrak{F}}$  Wings above blue-black with the fringe orange, the basal area shot with dark blue-green.

Front-wings traversed beyond the middle by a series of six small a spots, the third to fifth lunular, the others sub-ovate; a sub-costal of the same colour between them and the apex.

Hind-wings with an oblique discal series of seven blue spots, ring from the apex to the anal angle; eight sub-marginal white its delicately encircled by blue scales and seven linear marginal it; abdominal margin and body brown, coarsely clothed with hair.

Wings below silky olivaceous, the apical area inclining to ochraceous, a sharply defined by a curved line running from the anal angle of hind- to the apex of the front-wings; the basal area crossed by two gular silvery bands, terminating in the front-wings in two ochraceous ts; the interior band limited outwardly, and the exterior one inwardly, a black and white line.

Front-wings with a pale undulated line upon apical area, two black llate spots with white irides near the base, and a black stria at the lof the cell.

Hind-wings with a large sub-anal silver patch and eight white subrginal spots, the three nearest the anal angle pupillated with black; dy brown, the centre of the thorax, palpi, tibiæ, and tarsi ochraceous. panse of wings 3½ inches.

Inhabits West Africa (Ashanti?).

This beautiful species, which I hope shortly to be able to figure, is lied to *Tiridates* and *Mycerina*, the coloration of the upper surface somewhat similar to the former, the shape of the wings and aderside colouring more nearly approaching the latter species.

British Museum: 5th May, 1869.

# NOTE ON THE ŒCONOMY OF NEMATUS SALICETI, FALLÉN. BY ALBERT MULLER.

In the beginning of August, 1868, I collected in this neighbourhood quantity of the common elongated spongy galls, belonging to this pecies. They occurred on a willow (Salix fragilis?), on which it rould have been difficult to point out a leaf not beset with two or more specimens; in fact, many leaves were crowded to excess, and resented the appearance of two rows of red rugose beans, but the midrib of the leaves was free throughout.

The larvæ were full-fed about the 8th of August. Unlike other gall-feeders of the genus, they had not eaten the galls to a clean thin shell, but left a rather thick fleshy covering intact, through which they gnawed a round hole and dropped to the ground, leaving their late

30 (July

tenements full of "frass." I handled sundry specimens of this larm before they were full-fed, and noticed no particular odour; but when happened to take up with my finger a full-fed larva, which I have watched tumbling down, I immediately dropped it in disgust, as a most unpleasant odour, similar to that of Acanthia lectularia, struck my olfactory nerves.\*

The larvæ now bury about an inch under ground, and pass thei metamorphosis there in a spun stout cocoon of brown silk (not mixed with any earthy particles), and of about the size of a grain of wheat. Many of the cocoons having been attached to small pebbles, presented, after removal, one or more flattened sides. When the cocoon is finished the larvæ have completely lost the offensive odour they previously possessed; I repeatedly made sure of this by turning larvæ out of the cocoons and purposely irritating them; and at the risk of being do nounced as "dealing with hypotheses," I am tempted to conclude that this odour is given to them as a safeguard during that short but most critical moment of their lives, when neither the shell of the gall no mother Earth can protect them against their enemies.

The imagos made their appearance between the 13th and 15th October of the same year. On the evening of the last-named day, at quarter-past six, I began to watch one of the cocoons, which, by sundry slight movements, had given me warning of some impending change I had previously taken the precaution of placing several cocoons upon a highly-polished glass. A few minutes afterwards the antennæ of the insect were gently pushed through a very narrow slit at the upper end of the cocoon, and, with a tremulous motion, they seemed to explore the surrounding spot; five minutes later a part of the forehead made its appearance, and I could now see how the little busy jaws worker their way along the slit mentioned, gradually widening it, until the top of the cocoon, shaped like a skull-cap, was nearly detached. The insecdirectly pushed this easily aside, rapidly walking out of the cocoon, and now busily cleaning its antennæ by moving the fore-feet over them, and subjecting the wings to the same process with the hind legs. It tool to flight immediately afterwards, and must have attained to full ma-

Other accounts of this faculty being possessed by larvæ of saw-flies are on record: see, for instance, Westwood, Introduction to Mod. Class. of Insects, vol. ii, p. 104. Some species, as is well known, have the power of discharging an oily liquid, others are covered with a slimy substance, &c. These arrives protective properties may possibly, to some extent, account for the Tenthredning being almost in colous lively colours, for it seems swident that a group thus rendered distantful by various attributes has a far greater chance of holding its own in Nature than others. This "survival of the flitted" seems to have been conducive to two distinct results: a strong increase of numbers, both or species and the survival of the condition of the colour power of the properties of the group have only have the advantage of numerical increase, whist the species living exposed on various plants have profited by the influence of light besides; hence the former all show dull colours, and present a marked contrast in this respect to the external feeders.—A. M.

y within the cocoon, as I could perceive no change whatever in me from the time of extrusion until its death, which took place on 21st of October. None of its companions lived longer than eight after leaving the cocoon, but, as I did not know what to feed them a, it is possible that, in their free state, these insects may have a ger existence.

Penge, S.E., 30th May, 1869.

[I am rather inclined to think that the appearance of the perfect—flies in October was exceptional, and that their development was elerated by the great heat of last season. This seems the more shable because the willow being deciduous, any eggs laid in the leaves in the autumn would perish with them, before allowing time for hatching, or for the larvæ becoming full-fed.

I have come across a curious mistake in one of the old authors, minding one of the frequency with which the parasitic Callimome s, of late, been mistaken for the long desiderated male of Cynips. Trisch's "Insecten Teutschlands" (1721), Theil 2, p. 22, is a chapter this Nematus—" Von der Schlupf-wespe in der Weiden-Knoden"— which the gall and habits of the larvæ are correctly described, but he notice of the perfect insect refers to a parasitic ichneumon; and on ab. iv, the gall is figured with male and female parasites instead of aw-flies. Nearly a century and a-half has elapsed since Frisch wrote, and still we find similar mistakes in vogue.—R. McLachlan.]

Note on Tipula flavolineata and Ctenophora atrata.—I found the larvæ of Tipula lavolineata, Mg., last winter abundantly in rotten birch stumps, and more sparingly n rotten beech and furze; with them were several of Ctenophora atrata, L., which I did not, however, distinguish at the time, this species has since occurred abundantly at rotten alder stumps. I am indebted to Mr. Verrall for the names of these insects, and for the information that a light variety of the male of atrata equally common with the black form appears to be the insect described as Ctenophora fuciformis, M. The Ctenophora emerge from the pupa in the burrows in the wood in which the pupæ lie, the perfect insect afterwards making their way out. The Tipulæ pupæ, which can run rapidly up and down their burrows, on the other hand, come out of the wood as the Sesiida do, or as the ground-living Tipula come out of the earth, retaining a support by two or three terminal segments. With only one or two exceptions, they emerged between 7 and 9 p.m., and on several occasions I had the pleasure of observing the process. The pupa-case bursts over the back of the thorax and the thorax of the imago rapidly emerges. The head with the antennæ and palpi are folded down in front, but rapidly assume their natural position. The basal portions of the legs and wings soon appear. The expansion of the wings looks as if it resulted from their being dragged out between the insect's

body and the margin of the pupa-case, between which they seem tightly he The legs are placed side by side in front, the anterior pair occupying the cent position, and the intermediate pair the external. As the insect continues to emer by the vermicular movement of the abdomen, the legs, alternately, are drawn of short portions at a time by contractions at the trochanteric joints, and resemble alternately moving rods of some complex pumping apparatus. Their length see to be gained by expansion during emergence, similarly to the wings. In abo twelve minutes the tips of the wings are drawn free of the pupa-case and lie fl one over the other behind the insect, a position they never afterwards assum they are a little limp, but fully expanded. The legs are still tightly stretch downwards in front of the abdomen, and have only emerged for about half the length. The abdomen is distended into a wide, uniformly cylindrical tube, as lar and nearly as colourless as the larva, and decidedly larger than the whole pupe its first three segments are inflated with air, their walls are such delicate men branes as to make one doubt their capacity organically to connect the extremiti of the insect; in the transparent posterior of the wall, however, the dorsal vess can, with a lens, be seen actively pulsating. The next three segments seem equal filmy as regards their walls, but contain a straw-colored fluid, which is in the sam cavity with the air above it. The posterior segments are still in the pupa-case The legs continue to be alternately pulled by their trochanteric joints and seem t be freed by the continuance of the vermicular movement of the abdomen, which does not, however, progress any further out of the pupa-case. As the legs slowl come out, the knee joints now bend and leave their position close to the body, the anterior legs bend forward, the posterior at first laterally, and finally almost directly backwards, the others occupying an intermediate position; the femora being alread sufficiently firm to communicate the extracting force to the lower part of the leg in a direction transverse to their length. As they rise simultaneously and are always at a uniform level, the creature presents a curious umbrella-like aspect, the femora projecting like the spokes of a wheel, and the long tibiæ and tarsi ben downwards and converging to the front of the pupa-case. At the end of twenty minutes from the bursting of the pupa, the legs become free, all nearly at the same time, each as it does so, rising into a somewhat natural position. In a few seconds more, the animal regards its legs as perfect, and lays hold of the nearest object the fluid mentioned above is discharged into the pupa-case, the air above occupying its place, the abdomen partially collapses and easily leaves the pupa, the insect crawls to a convenient place of rest, and is able, if disturbed, to buzz along the ground. More fluid is afterwards discharged, and the air must be rapidly absorbed as, at the end of an hour, the abdomen has nearly its mature colour and form and the Tipula is ready for flight .- T. Algernon Chapman, M.D., Abergavenny June, 1869.

Notes on Curculionidæ—Poöphagus nasturtii.—This species, though so rare near London, is not likely to be scarce where its food-plant is allowed to grow undisturbed. Besides two places within a few miles of my residence in East Kent, I have met with it lately near New Quay, on the north coast of Cornwall, where the water-cress grows luxuriantly in the streams near the sea. Collectors should treat the cress with some degree of tenderness, for, if injured, it does not always recover

and is apt to be overrun and destroyed by its stronger neighbours, such as r-celery, or even stinging-nettles. One locality in this neighbourhood has quite destroyed in this way: and in another the cress, for want of care in ing, is likely to be exterminated. *P. sisymbrii*, which usually accompanies its ener here, did not occur to me in Cornwall.

Gymnetron beccabunge.—The typical form of this insect, with the elytra red ept the sutural region), also appears, but sparingly, near New Quay. The few imens I could obtain are considerably smaller than the black examples met in the East of England. They were swept off warm banks in meadows. They were successful to the same locality.

Tropiphorus carinatus.—I succeeded, in April last, in finding as many as six mples of this scarce species within a few feet of each other. They were in ellent condition, having been bred in thick moss round the roots of the common se, in company with Barynotus, Alophus, Cneorhinus, Canopsis Waltoni, and ser common species. The rare Pachyrhinus denticollis occurs also in similar nations.

Ceuthorhynchus suturellus (?).—There can be no reasonable doubt that Cardane pratensis is the food-plant of this species; as I have taken several examples
ring May last, all from that plant. The beetle appears to be generally but
raingly distributed in this neighbourhood, and is likely to have been taken in
her parts of the country. It should be sought for while the Cardamine is in
possom, as the plant is apt to be choked and disappear amidst the after-growth of
the surrounding herbage, and the insect is then very difficult to procure.—W.
TLDEN, Stanford, Hythe, Kent, June 7th, 1869.

Food-plant of Ceuthorhynchus viduatus.—It may not be uninteresting to British oleopterists to know where to look for Ceuthorhynchus viduatus. I was aware at it had been found in sandy places, and once on a wall top; but did not, until august last, know what plant it frequented. While the Cruciferæ furnish pabulum o many species of the genus, I found that, in Berwickshire at least, the insect in question is attached to a member of the Labiatæ, viz., Stachys arvensis, or "Corn Wonnelwort."

Woundwort."

Not having access to "The Entomologist" of 1841, or "The Zoologist" of 18445, in which the species is recorded as British, I do not know whether its English food-plant has been noted.

In a neighbouring bog I found at the same time one or two worn specimens of Hydrochus brevis, along with Hygronoma dimidiata, which latter has not, I think, been yet recorded as Scotch.—R. Histor, Blair Bank, Falkirk, 14th May, 1869.

Note on Saperda scalaris.—I have just bred two specimens of Saperda scalaris from pupe found beneath the bark of Alder (Alnus glutinosa).—J. Chappell, Boundary Lane, Greenheys, Manchester, 27th May, 1869.

Chrysopa vulgaris hybernating in a hornet's nest.—Last autumn Mr. Evans of Lesness Heath, Kent, obtained a very fine hornet's nest, out of which, this spring, emerged a number of living specimens of Chrysopa vulgaris, which had evidently chosen it as a comfortable hybernaculum. This nest was exhibited at a recent soirée of the West Kent Natural History Society, and some of its admirers, in the innocence of their hearts, imagined the Chrysopa to be the architects!—R. McLachlan, Lewisham, 4th June, 1869.

Thripticus bellus; correction of an error.—In my notes on this species in I number (p. 2), an important omission occurred. Instead of "third and fou longitudinal veins totally obliterated," should be "third and fourth longituding veins almost perfectly parallel, sixth totally obliterated."—G. H. Verrall, Dennis Hill, London, 6th June, 1869.

On the Noctua extrema of Hübner.—Last summer when I met Dr. Staudin in Vienna, he was on his way to Pesth, a locality I had some thoughts of visit myself, but my friend, Dr. C. A. Dohrn, of Stettin, dissuaded me. Unfortunate a Coleopterist is not a good guide for a Lepidopterist, and I found out afterward had made a great mistake in not going to Pesth, and have resolved to be wiser not time.

After Dr. Staudinger had been to Pesth, I saw him both at Prague on his whome and again at Dresden after he had reached home, and he was very full of whe had seen at Pesth—the National Museum there containing the original collection of Ochsenheimer and Treitschke. The former had been at first placed on the ground floor, with this unfortunate result that in 1838, on the occasion of an usual flood, it was for nearly two days under water! However, Dr. Stauding assured me there were many interesting things to be seen in both collections, at that he had made several notes with reference to the synonymy of some obserspecies, and that he would shortly publish an article on the extrema of Hübm This article, which I have been anxiously expecting for nearly a twelvemonth, happeared in the first portion of the Stettin. Entomologische Zeitung for 1869, at 85 (though omitted in the list of contents of that number). As I apprehend the may interest many English readers, I append a translation of the article.

#### " Tapinostola extrema, Hb., fig 412.

"That we have had this somewhat puzzling species standing in our collection under another name had long been tolerably evident to me. Hübner's figure 4 must, at any rate, have been made from an abnormal specimen, since a perfect white Noctua with black cilia to the anterior wings has probably never been foun It was just possible that the English Noctua Bondii might be the true extrema Hübner; since that species in the coloration and spots of the anterior wings agreevery fairly with Hübner's figure, and sometimes shows even a dark shade before the cilia, which the colourer might by mistake have transferred to the pale cil themselves. But since, according to Treitschke, v. ii., p. 315, Hübner's extrem has lately been added to nearly all the larger collections from the neighbourhood of the Rhine and the Main, and Bondii has hitherto only been taken in the Sou of England and on Mount Parnassus, it became highly improbable, independently its slighter form, that it could be the extrema of Hübner. According to this statement made by Treitschke it was evident that this extrema must be a specie occurring with us in Germany, and probably existing in our larger collections.

Now Guenée has in the 1st volume of his Noctuæ at p. 103, described a ne species from England, which in my catalogue of 1861, at p. 46, I referred to extreme Hb., but without assigning any reason for this step, nor at that time indeed coul I have done so, so that the union of the two, especially considering Hübner's fit 412, must have appeared very venturesome. Guenée, in good truth, looking a Hübner's figure, could not suspect in it his English species, and therefore describe

new under the name "concolor." This English species, which, since the ng of the fens, where it formerly occurred, has not now for many years been with in England, has now been found, as I learn on good authority, near , in Silesia, near Vienna, and in Hungary. There seems, therefore, no doubt it frequents all similar marshy localities, consequently would be found at the e, and the Main, whence Treitschke obtained it, unless there also the marshy nd has been drained.

Now what did I find in Treitschke's collection with the name extrema? Two oitable specimens of concolor. In Ochsenheimer's collection were two old, specimens, the upper one being a 3 fulva, Hb., the lower one, in very bad ition, seemed tolerably surely to be Guenée's concolor; the label written by senheimer himself, stands thus-

"Fulva, Hb. & Extrema, Hb. 9 "

This agrees precisely with what Ochsenheimer says in his vol. iv., p. 82, and ch Treitschke vol. v., p. 313, takes for an error.

Treitschke hardly appears to have known the red form of  $\mathit{Tap.fluwa}$ , the  $\mathit{fulva}$  ${
m H\ddot{u}bner}$ , and it is quite a matter of indifference whether in  ${
m H\ddot{u}bner}$ 's fig. 413 he s a  $\delta$  or a  $\circ$ , since to my fancy this figure is incorrect, and does not suit either fluxa or fulva, of which last name Hübner has given an excellent representation

Since amongst bundreds of fluxa and fulva, I never saw a specimen with fig. 496. rceptible reniform stigma, such as Hübner's fig. 413 decidedly shews, I would ther consider it as a variety of a red Hellmanni, which always shews the reniform igma, and which species is now found not uncommonly near Berlin, Brunswick, Silesia, &c. Yet Hübner's figure is too bad to allow of our imposing his name um on our present Hellmanni. But at all events, we may now without hesitation nderstand by the extrema of Hübner, the concolor of Guenée, a species which opears to vary very much, and probably only when worn or faded occurs as white, s Hübner's figure or Herrich-Schäffer's fig. 337, of which colour I have a wasted  $\it Z$  . owdered with grey, just as Guenée describes it. As through the kindness of Mr. Jenry Doubleday, I have also had typical specimens of concolor here for comparion, there can be no doubt about the identities of my species.

After I had written the above, my friend A. Rogenhofer, Custos of the Imperial Museum at Vienna, on the occasion of the Naturforscher Versammlung here, brought me the extrema from the Museum collection. This specimen came out of Mazzola's collection, and there seems no reason to doubt that it is the original specimen figured by Hübner (fig. 412). It is nearest to a whitish female concolor, Gn., but certainly with blackish cilia, almost precisely like Hübner's figure. My friend Rogenhofer had the notion that the creature whilst drying its wings, &c., came against some sooty object, and if I am not mistaken, Professor Zeller, who had previously examined the insect at Vienna, was of the same opinion. But under the microscope I could find no dark extraneous atoms (only dust) on the scales; indeed it rather appeared to me that a great many of the scales in the cilia and near the hind margin had naturally a dark edging.

Quite recently I obtained a & Notodonta bicolora, of which the white of the

anterior wings was almost unclouded, but the posterior wings had the cilia a hind margin coloured blackish, which shows indubitably that this, though v rarely, may sometimes occur naturally in pale coloured insects. At any rate, the Hübnerian extrema should induce all young Lepidopterists to write in their obooks—In Closely allied species, don't describe or figure from a solder specimen."

With reference to the occasional blackening of white insects, I may ment that I have a fine male Stilpnotia salicis with the apical third of the costa of banterior wings conspicuously black.—H. T. Stainton, Mountsfield, Lewish June 15th, 1869.

Strange pupation of a larva of Pterophorus.—On the 6th of May Monsie Millière sent me from Cannes a larva on Andryala sinuata; this is a composition plant, with the underside of the leaf clothed with fluffy down; the larva, which was that of a Plume, already noticed by M. Millière in his Iconographie, vol. i, 331, pl. 39, under the name of Oxyptilus latus, had already assumed the pupatate before it reached me. But it had almost completely buried itself in the flur down on the underside of one or the leaves, and hence, instead of the pupa being fully exposed, as is usual with the Plume pupae, whether they are naked like fuser or hairy like pentalactylus, this was almost as well concealed as if it had being a cocoon, only a portion of the head end and a little piece of one side being be exposed to view.—Id.

Strange pupation of the larva of Gelechia atrella, Haw.—In the Entomologist Annual 1867, pp. 21—23, I gave a notice of the larva of this species which he been discovered by Mr. Jeffrey burrowing down the stems of Hypericum, causin the tops of the plants to droop.

In August, 1867, the Hon. Mr. De Grey sent me a box of insects to determin amongst which I found a fine specimen of *Gelechia atrella*, so fine that I suspecte that it must have been bred, and enquired the history of it.

The reply was, "Gelechia atrella I bred from a brown cocoon obtained t sweeping, in June, amongst grass in Buckinghamshire. There was much Hypericus in the place, and it may have been attached either to this or to the long grass. The cocoon was flexible and rather flat, and I much doubted if it were occupied until the insect emerged in a glass pill-box, where I had put it."

In May, this year, Mr. De Grey kindly gave me several stems of Hypericus tenanted by this singular larva, and as the plants began to wither before the larva were fed up, I had to supply them with fresh food, and to extract them from the old stems, a work attended with no little danger to the larvae, as I believe squashed three of them in the process; but I had at least three or four others alive and healthy, which I turned on to the fresh plants, into the stems of which the eventually bored, ejecting their "frass" either at the summit of the stem (where had cut off the tops, thinking thereby to facilitate their entrance) or at the sides.

At the end of May I thought it time to examine these Hypericum stems, to see how the larvæ were getting on, and to my surprise I found two brown, flat cases nearly half-an-inch long, evidently formed of a piece of Hypericum stem cut off by the larva, and no doubt intended as a puparium. It is difficult to give a good idea

m: perhaps the best simile would be to say that they are not unlike the ashioned spectacle-cases, which are rather limp and open at both ends.

Dertainly, if I had found one of these cases at large, I should have taken it for use of an Adela or Nemoto's larva. On writing to Mr. De Grey, to inform him e singular product from his Hypericum larvæ, he reminded me of his own one experience with the insect, intimating that the surprise I had then used—savouring, perhaps, a little of incredulity—had induced him to search he larvæ this year in the same locality, and to hand them over to me.

I had entirely forgotten the circumstance till he thus recalled it to my memory, in referring to his letter of October 2nd, 1867, I found the passage I have dy quoted.

I hope my incredulity may always lead to such satisfactory results.—ID.

Notes on the earlier stages of Thecla rubi.—On June 25th, 1868, having business a farmer at Haslemere, and not finding him at the house, I followed him to a uded corner of his farm, to a piece of rough pasture sloping down to a little am. While talking with him, I swept the net across some plants of Genista toria which grew there in abundance, and to my great surprise found in it a en onisciform larva, which I at once concluded to be that of Thecla rubi. By gent sweeping on that and subsequent days, my brother and I obtained some ens of these larvæ, some nearly full grown, others quite small. In order to keep ir food fresh as long as possible, I passed the ends of the stems of a bunch of vista through the hole in the bottom of a large flower pot, and stood it over a sel of water, covering the top with gauze, and here the larvæ fed up rapidly in blossoms. After some days, the bunch of food being nearly stripped, I took it to supply fresh, and then found that those larvæ which were full fed had nearly forced their way into the thickest part of the bunch of stems and there lay shout web or attachment of any kind; others had hidden at the bottom of the and were also perfectly loose. The next bunch of stems was used in the same y by the younger larvæ as they fed up, simply forcing themselves into the sest part.

They seemed very hardy, one or two when shrivelled and almost ready to come pupe were accidently dropped on the floor in removing their food, a mode treatment that would be certain death to most larvæ, but they cast their skins though nothing had happened, and became as perfect pupæ as the rest, and in at state appeared to be equally tough.

By July 10th, three dozen had assumed the pupa state, and I confidently spected an August brood, but to my great disappointment, not one appeared till ais spring. Being kept indoors, however, they have been emerging almost daily nee April 20th.

They emerge about 9 o'clock a.m., and when just out, before the wings spread, how no trace of the lovely green colour of the under-side, that part being golden brown like the upper-side; as the wings spread, the green appears. Probably this vises from the green scales being all edged with brown, and in the unexpanded tate the edges alone being visible. This will account for the golden brown shade visible over the green in some positions.

The fact that the pupa is not attached or suspended in any way, either by anal extremity or by a silken band round the middle like the other *Thecla* is a remarkable.

Probably its habit is to lie near or on the ground among the thickest g and herbage.

I leave the description of the larvæ and green stumpy pupa to the practipen of my friend, Mr. Buckler, to whom I had the pleasure of sending specime—Charles G. Barrett, Norwich, 17th May, 1869.

Notes on the earlier stages of Thecla rubi.—The larva of this species had I been a desideratum to me, even after all the other British species of the ger some of which are very much scarcer in the perfect state, had been duly figur Perhaps the reason was that myself and friends tried to take it from the braw only; but although diligent search was made for it on that plant in localities whethe butterflies absolutely swarm, no one could find it for me; nor would butterl shut up in a glass cylinder, with bramble buds and flowers, deposit their eggs them. Doubtless the larva has been found on bramble buds, as Albin's account it fully testifies, still I can now give two other food plants for it, which I can help fancying are more to its taste.

On 25th June, 1868, Mr. W. H. Harwood, of Colchester, who had m acquaintance with the larva during the previous year, kindly sent me some: full-grown examples, beaten from broom. I lost not a moment in depicting the and no sooner were they done, than on the following day I received others fr Mr. C. G. Barrett, then at Haselmere, he having, quite by accident, discovered to on Genista tinctoria, and most fortunately he was able to send me four in differ stages of growth. These from the Genista were not so brilliant in markings those from broom, but otherwise identical; and from both sets of larva perfect insects came forth from the 25th of April to 9th of May, 1869, very lov specimens.

The full-grown larva is about \$\frac{1}{8}\$-inch in length, and gains nearly \$\frac{1}{8}\$-inch wl stretched out in walking; thick in proportion and somewhat onisciform in sha flattened beneath, the head very small and retractile, the second and third a ments rounded above, the others to the tenth inclusive have a dorsal hollow we an eminence on each side of it, which slopes thence to the lateral ridge; the l three segments are rather flattened above.

The ground colour is a bright yellowish olive-green, the hollow of the back a darker, full green, and down its centre runs the pale olive-green dorsal li which gradually widens and suddenly contracts on each segment throughout course, and becomes darker on the last three segments, and bordered there by yellowish stripe on each side; from each eminence on the other segments at h bright yellow streak slants backwards and downwards, bounded beneath by equally thick streak of deep full green, most intense at its beginning on each sement; the lateral ridge has a stripe of yellow beginning at the third segment a running continuously round the anal extremity; parallel to this and above t spiracles is a faint indication of a stripe a little yellower than the ground color the head is pale brown with darker brown round the mouth; the appearance the larva is velvety, caused by minute raised points bearing fine short bristles.

'he larva when younger has the yellow markings less distinct, and in two of xamples found on the *Genista*, they scarcely appeared even to the last.

The larva enters the earth, but only just beneath the surface, to undergo its

The pupa is very short and thick, especially about the middle of the abdomen, deed, and blunt at the anal tip; the wing-cases nowhere projecting, but smooth darge in proportion, and like the rest of the surface, unpolished; in colour, it is dark, dull, purplish-brown, and it is thick set with short dark brown bristles, pting only the wing-covers which are blackish-brown and have no bristles. appearance would assimilate very well to pellets of earth.—WM. Buckles, worth.

Irish Lepidoptera in April, 1869.—I spent the latter half of April with some friends at Castle-Connell, near Limerick, when, although I had many other tters to occupy my time besides Entomology, I managed to spare a few days in pursuit of my hobby. During the greater portion of my stay the weather was 3, but with cold or high winds, and every night, except two, when it rained wily, the brilliancy of the moonlight precluded even the hope of successful garing, so that I did not even attempt this method of collecting. Larva hunting, , was almost a total failure, and after the first two or three unsuccessful attempts beating, I gave up the search in utter disgust. The 25th and 26th I devoted to e exploration of Cratloe Woods, net and beating stick in hand. These woods are out 400 acres or more in extent, lying nearly parallel to the Limerick and Ennis allway, and are 10 miles by line from the former town, although not more than ve as the crow flies. They are on the side and foot of a moderately steep and gh hill, one of the lower range of the Clare mountains. The lower part, which is a the flat, is mostly Scotch fir and larch with a thick undergrowth of bramble, olly, hawthorn, &c.; higher up the hill side the fir gives place to oak, beech, irch, sallow, hornbeam, spruce, fir, &c., all becoming very stunted towards the top; he highest point being again larch. Above the wood for miles stretches the heathlad mountain side, the highest points running into huge mounds of loose shingle and moss. All through the wood the whortleberry was in profuse blossom, and this and holly were the most noticeable features of the undergrowth, which, however, comprises a great number of other plants. It was terrible windy each day I went, to which, partially at least, may be ascribed my want of greater success, for looking at the great variety of vegetation, I cannot but think these woods only require systematic "working," to yield a much richer insect-fauna than the few common species named below would indicate.

On "taking stock" on my return to Limerick, I found I had captured or seen four species, viz.—P. napi, A. cardamines—common; V. urticw, V. Io.—both very abundant in all stages of disrepair; S. Ægeria—common; S. Mægera—only just coming out; P. Argiolus, during the two days I saw between 30 and 40, which, looking at the immense quantity of holly, I thought few, but doubtless many escaped my notice, owing to the height of the bushes, and density of the wood.

F. atomaria—on the heath the commonest species seen, except A. cardamines a few days later at Glenenomeragh; P. petraria—3, one being crippled and turned

loose again. I see Mr. Birchall only records this species as Irish from Wickle L. marginata, C. ferrugata, C. suffumata, P. gamma—1 each.

The only other species seen during my stay at Castle Connell were, subtristata, at Glenenomeragh; S. populi, in pupa; O. bidentata, one pupa, sin emerged; B. quercus or calluna, still in pupa, and two other pupa I do not reconise, and from which the imagos have not yet emerged. In the woods, too, I sa a few micros, but my indifferent eyesight quite precludes my attempting it capture of these beautiful atoms.—Herbert Marsden, Secretary, Lepidopterist Exchange Club, Gloucester, May 11th, 1869.

Great abundance of Vanessa cardui in 1868, &c.—Observing Mr. Bax's note of this subject, it occurs to me that some of your readers may be interested in one two jottings of a similar kind.

I spent the month of August last at the delightful little watering-place of Bournemouth, Hants. Rambling one morning along the beach westward toward Poole, I was astonished to find V. cardui, in abundance, flying about in the he sunshine, over a district covered with hills of blown sand, just adjoining Pool harbour. It would have been a comparatively easy task to capture fifty of thes insects, most of them in fine condition; but being merely a collector and not slaughterer, I took only the few that I required. I saw scarcely any other specie of Lepidoptera at the same place and time; but Megæra, Tithonus, and Semele wer very abundant in the neighbourhood of Bournemouth.

The locality is also rich in *Libellulida*.—W. H. GROSER, Vernon Cottage Thornbill Road, N.

Note on the paucity of insects.—I am afraid we are to have a poor season; we have as yet found everything very scarce; even the commoner species have not "put in" at all in many cases. A friend and I were out last night for a walk it the rain, and found two dead swallows on the road. I opened one, and found scarcely a trace of food in it; shewing how scarce insects must be. I have no doubt many birds which depend upon them are dead.—T. J. Carrington, Melbourne Terrace, York.

Deilephila lineata at Lewes —Yesterday morning I saw on the setting-board of a friend of mine in this town, two D. lineata (livornica), which had been brought to him within the last few days. One was caught in a greenhouse, and the other I believe, among trefoil or lucerne which was being thrown into a hay-loft. Their condition is fair, but not first-rate, and I think they are evidently hybernated.

Not having heard of this rare species being taken so early in the year before, I thought perhaps it might be worthy of a note in the Ent. Mo. Magazine.—J. H. A. Jenner, Lewes, May 27th, 1869.

Note on the black variety of Amphidasis betularia.—Last autumn, at the usual time, I found a very pale larva of A. betularia; it was almost fawn-coloured. On the 25th inst. it produced a fine female of the dark variety, known as carbonaria. This is passing strange—the larva wanting pigment, the moth having more than enough.—R. C. R. Jordan, Edgbaston, Birmingham, 28th May, 1869.

apture of Catoptria aspidiscana.—On the 15th inst., I took (in company with regson) a few fine specimens of C. aspidiscana flying in the hot sunshine. I aly one day fit for collecting, and am not likely to have more chances of the species this season, the weather having been too cold ever since.—Hodgekinson, Preston, May 29th, 1869.

Tote on Scoparia ulmella.—Some years since, I took some Eudorew on elm-trees ockholes Wood, near here, and they agree with the figure of ulmella in the number. Some I sent for names were returned as varieties of delunella. I know what became of them; however, I am now satisfied they were not tella (resinalis), as that species has never been taken here. It is quite possible of them may exist in some cabinets. It is fifteen years since I took them, the trees have been cut down, but in July I intend to look again for the tes.—ID.

Xylomyges conspicillaris at Worcester.—I met with a very fine female of this y on the 27th of last month. It was lying down upon the stone pavement at ack door. The cold weather no doubt retarded the appearance of this insect. is no appearance of its having flown.—Abraham Edmunds, Cemetery House, rood Road, Worcester, May 21st, 1869.

Captures of Xylomyges conspicillaris.—On April 26th I went, with two of my lren, to a neighbouring wood, and in the course of an hour we took three conspicillaris—one a-piece, at rest on the trunks of young oaks. Went again next day, but found nothing.—E. Horton, Worcester, May, 1869.

New locality for Eupithecia lariciata.—A few days since I had the pleasure of ing a few good specimens of E. lariciata at Breadsall, near Derby.—Geo. Baker, Kedleston Street, Derby, 16th, June, 1869.

on the habits of the larva of Hepialus velleda.—This insect has been taken for eral years in the neighbourhood of Congleton, and as very little, if anything, pears to be known about the larva (Mr. Buckler wanting it to figure), for some ne past I have been on the look-out for it. I am now happy to say those efforts we been attended with success. On Monday last, June 7th, two fine 3 specimens nerged from the pupae. It continues two years in the larva state, feeds on the ots of the common fern (Pteris aquilina), and also on other roots, ceases feeding the end of the second summer or the latter end of the year, hybernates without inning a cocoon to remain during winter (like hectus); it does not feed again in the spring before changing, nor does it, as a rule (as far as experience goes), spin by cocoon; it continues in the pupa state about twenty-one days, when the moth opears.—Joseph Steele, High Street, Congleton, June 9th, 1869.

Tinea pellionella feeding on cobwebs.—I forward specimens of what I take to be pellionella, which were fed on cobwebs. I used to see the larvæ crawling on the antry ceiling last autumn, and took several: they appeared to be eating cobwebs then I first saw them, so I gave them nothing else. Poor Mr. Hopley felt much atterest about them, hoping that they might prove to be Kindermanniella.—N. J. Davids, 14, South Bank, Regent's Park, June 15th, 1869.

### Rebiew.

"THE LEPIDOPTERIST'S REGISTER," by T. J. CARRINGTON. London: John Van Voor

This volume will be welcomed by all Lepidopterists who like to keep methodi memoranda of the histories connected with each species in their cabinets. It compiled on the principle of "a place for everything, and everything in its place.

# Obitnary.

Mr. Abraham Edmunds died at the Cemetery House, Astwood Road, Worcest on the 3rd inst., at the age of 65. He was so well and so long known to all low of Lepidoptera, that his death will be felt by very many of the brotherhood a blow and a warning. A man of a very strong constitution, he perhaps tried too severely in the enthusiastic and unremitting pursuit of his favourite scient He leaves a widow, but no children. Fond as he was of Entomology, he not allowed his pleasure to interfere with his duty, for the conscientious discharge which he was always much respected among his fellow citizens.

ENTOMOLOGICAL SOCIETY OF LONDON, 7th June, 1869. H. W. BATES, Ed F.Z.S., President, in the Chair.

Mr. Stainton exhibited a Micro-Lepidopteron, the larva of which had been d covered by M. Millière, feeding upon Osyris alba at Cannes. For this insect, Millière proposed the name of Paradoxus osyridellus; it bore some resemblat to Zelleria, but with long tufted palpi, and, in repose, rested with its head i plied to the surface, with the body el-vated somewhat as in Argyresthia. He a exhibited drawings of the larva of Gelechia atrella, which inhabits the stem Hypericum, and uses a piece of the stem as a case wherein to change to pupa.

Mr. Druce exhibited a collection of butterflies from Borneo, in which there was fine new Ornithoptera, &c.

Mr. Smith exhibited a luminous larva, which he supposed to be that of Pyrophila, from Uruguay; it exhibited ten bright green spots, and the head w intensely red, so that the luminous properties of the creature might be compar to railway signals. Also living examples of a brilliant species of Cassidi (Physonota gigantea), brought to Liverpool in log-wood from Central America.

Mr. Pascoe exhibited a remarkable beetle from Champion Bay, intermedia between Hister and Claviger.

Professor Westwood exhibited drawings of two new species of Ectrephes, whi genus he referred to the Ptinidæ; and also new forms of Paussus, Articerus, &c.

Mr. Smith exhibited a bee (Melecta) captured the day previously at Souther completely covered with the larvæ of Meloe, so that probably 300 or more of t parasites existed upon it.

Mr. Wallace read "Notes on Eastern Butterflies" (continuation).

Major Parry communicated "Observations on Lucanoid Coleoptera with revised catalogue of the species."

Mr. Walker communicated "Notes on Chalcidida, with description of a ne species of Megastigmus."

Mr. Smith read "Descriptions of new species of the genus Pison, with a list those previously described;" and "Descriptions of new genera and species of exol Hymenoptera."

## REE LEPIDOPTEROLOGICAL EXCURSIONS NEAR MESERITZ, IN THE PRUSSIAN PROVINCE POSEN.

BY PROFESSOR P. C. ZELLER.

There are plenty of notices of excursions, but these generally te to localities which were quite new to the relater, and therefore shed him with extraordinary productions. If they relate to neighbourhood of his own dwelling place they then record only which is striking, and omit that which is usual. In neither case uch notices furnish a complete picture of the Lepidopterological na. In a perfectly strange neighbourhood one certainly sees some ne species peculiar to it; but, as is well known, an investigation of w days will not suffice to discover those which are most concealed are often the most interesting If one hesitates to introduce the ducts of one's own neighbourhood except in a systematic arrangent, the reason seems very natural that one fears otherwise to furnish ch that is uninteresting. It is certain, that complete notices on the pearances at particular periods of the year, if they come frequently m localities situated near one another, and differing little in their tracter, would show great agreement, and would, therefore, be of le interest to the contributors. But it would be quite otherwise the dwellers in localities of a different nature. For example, that ich is the case around Meseritz and in a great part of Northern ermany, will scarcely be met with anywhere in England; it will, erefore, for an Englishman, have plenty of interest, to learn someing more precise, and to be able to make comparisons with his own untry, provided that he does not shut himself up too exclusively and sist on being blind to the products which do not occur in his own ountry! I give, therefore, in the following pages the results of a few cursions in former years, which I made to a precise locality, because believe that a foreigner can thereby best make a conception of the ature of a part of this neighbourhood. Should these communications eet with approval, I will in future notice such parts of the neighbourood of Meseritz as have different peculiarities.

I must, however, in the first place remark as follows:—the town of Aeseritz lies in a fruitful, nearly elliptical valley, not quite in the middle. The river Obra intersects this valley in a very tortuous course, and passes northwards by the town; immediately below the town there can into it an equally serpentine stream, the Packlitz.\* This valley

<sup>\*</sup> It was from this position between the two rivers that Meseritz received its Polish name, which, thave been informed, signifies Mesopotamia.

is encompassed with gently rising, low, sandy hills, generally clots with firs (*Pinus sylvestris*). Four roads go from the town nearly to four points of the compass.

That which goes towards the North passes first through a sm suburb, then, for about ten minutes, through a fruitful tract product wheat and other field-crops; then this begins to change for sand, as after ten minutes, whilst ascending very gently, one is in the pure sa of this chain of little hills, the fir woods of which are, however, of stantly being cut down to give place to rye, potato, and lupine field. The hollows are all peaty and filled with marshes and lakes.

To the left of the road there rises first a gentle elevation of abo thirty feet, which is used as a Jewish burying-place. This Judenbe clothed with fir trees is encompassed with a wall of sand at its bar within the boundary on the east and south side are some aspens, t only leaf-trees occurring on the hill, here, however, they are mingl with the fir trees. As no sheep may be pastured here (sheep are t veritable pests for the insects on sandy soils), the sand can much bett develope its vegetation here than elsewhere, although it is indeed scan enough. It consists of Galium verum, Festuca ovina, Corynephor canescens, Calamagrostis epigejos (here and there plentiful, hence fr quented by Pamphila Actaon), Gnaphalium arenarium (in profusior Potentilla incana, Artemisia campestris, Centaurea paniculata, Sile otites, and, though rarely, S. chlorantha, a little Astragalus arenariu Thymus serpyllum, and Hieracium pilosella in plenty, Sedum acre, a fe plants of Scabiosa columbaria, a little Saxifraga granulata, and Arune phragmites in the hollow, which contains a tank, and everywher especially in the driest places, lichens and mosses.

On the sunny slopes of the hills grows Calluna vulgaris, an between the ditches much Calamagrostis epigejos (the only locality for the larvæ of Pamphila Actæon and Gelechia lutatella), Galium verus (hence here Botys flavalis is very abundant), and Veronica spicata, an in the shade of the fir trees and the numerous juniper bushes Anthoricum ramosum, Scorzonera purpurea, Potentilla alba, Fragaria colling Spiræa filipendula, and Trifolium montanum. To the right of the road behind some sand-fields, is a marshy meadow, plentifully grown overwith species of Carex and Salix repens, the haunt of Cænonympha Davus Beyond it, on the sands, are some young plantations of fir trees with similar vegetation as at the foot of the "Judenberg," and some loft firs; then follows a great peat-moss, which has been principally obtained by means of a canal through which the water of one lake in

nected into the Obra. The occasionally high banks of the canal are the object of the occasionally high banks of the canal are the occasionally high banks of the occasional banks

#### THE 29TH OF MAY.

After a long period of very cold weather, which had totally goved the orchard crops and partially injured the rye, at last for a days milder weather had set in. It had rained in the forenoon of day and was warm; the sun, however, shone out before evening.

In order to collect Gelechia superbella, and the larvæ of Setina dweinii, and to see the oviposition of the Lycænæ Hylas and Medon lestis), which I wished to rear, I went at 3 p.m. to the Judenberg. I did not stop on my way, I only saw, not far from the suburb, a costege farinata (niveata) on the wing coming from the fields, and itwards, on a field, another.

From the aspens of the Jews' burying-ground I beat a beautiful ale Cymatophora or, and not unfrequently Phoxopteryx harpana, and the aspen bushes a beautiful Acidalia immutata 3.

In the open places which were more grown over with Festuca and typephorus, Crambus chrysonuchellus occurred in tolerable plenty, se were already accompanied by a few C. pratellus. Whilst I was king amongst the lichen (which covers the ground here and there is a grey efflorescence) for the larvæ of Kuhlweinii, there flew up at tervals a few bad Gelechia psilella, two G. desertella,\* and a quite sh G. umbrosella, Z.† I found by degrees 4 larvæ of Kuhlweinii, hich sat partly concealed under a clod, and 4 larvæ of Lithosia ideola of medium size. To my surprise, 2 Kuhlweinii & flew off pm grass stems, certainly quite fresh out, but after such a long period cold weather I had not expected them.

Whilst poking amongst Thymus serpyllum, I turned up by degrees of Gelechia superbella, their white heads at once striking the eye, with their antennæ obliquely directed upwards, they flew rapidly for a short istance and then settled again on the ground to take another hiding-

By describing I understand those specimens which are so similar to terrelia that they might adily pass for that species, but which are smaller, paler, and generally more sharply marked, and with first make their appearance as early as the last third of May. The characters given by Stainten needs Britannica, p. 113) are not always suitable; even the size is no constant character, and there mains hardly any other of tolerable certainty, except the earlier periods of appearance.—P. C. Z.

If This species, which is very abundant in June on sandy plains, and can be beaten out of juniper in the bushes, is not Frey's Geleckia affinis (tepulella), but has the opposite spots almost pure thick they very in size and distinctness, and in many specimens, which I cannot separate as a distinctness, and in many specimens, which I cannot separate as a distinctness, see the are quite faint. My remark on umbrosella in the Isis, 1839, p. 201, that it differs from species, they are quite faint. My remark on umbrosella in the Isis, 1839, p. 201, that it differs from singuish it Stainton gives July as the period of sppearance of the wings of G. affinia. The specimens almost his time we cannot for the most part refer with complete certainty to umbrosella because sken at that time we cannot for the most part refer with complete certainty to umbrosella because they are wasted. In no umbrosella do I see the pale yellow linear connection between the two black hey are wasted. Which the uninjured tegulella shows, but at most some whitish scales on the exterior side of the first spot,—P. C. Z.

place, I had concluded that the larva must feed on Thymus serpyllum but this very day this conjecture was to be annulled.

One Æchmia equitella, and one Elachista Bedellella also turned un in this place. On the slopes of the enclosure wall I collected a fer larvæ of Acidalia decorata on Thymus serpyllum (which I succeeded is raising to the perfect state). On the wall there sat on a dry plant; creature which looked to me like a small wasp; as I wished to examin it more closely it flew off, but on account of the dull close weather, it flew badly and I easily caught it; it was a very beautiful & Sesia empr formis (tenthrediniformis, Ochs.), which had evidently not long emerge from the Euphorbia cyparissias, which grows here rather freely. 0 Silene otites and chlorantha I found the cases of Coleophora otil of different sizes tolerably common (yet none were coloured like th figure in Stainton's Nat. Hist. Tineina IV. Pl. 2, f. 3,\* but all lik Herrich-Schäffer's figure 911), exclusively under the lowermost leaves of the plants, lying in the sand, many indeed a foot removed from th Silene, so that they appeared in their wanderings to have attacke other plants. The pale blotches with their round holes, on the lower most leaves betrayed the plants on which I had to seek for them. Iti probably only in captivity and when pinched for food that they clim higher up the plant. I found one case of Coleophora vibicigerella on stem of Artemisia campestris. Here also flew two specimens of Ptere phorus serotinus, thus at a time in striking contradiction to its name.

Thence I went over the height; without pausing there I satisfactory and unquicella abundantly on Calluna, and a few Cidari ocellata and biriviata, Borkh. (alchemillata, Tr.) From the twigs of the first males of Bupalus piniarius were easily induced to fly.

Then I went to the right of the road towards the drainage cana where I knew of a spot frequented by Lycana Medon. There wer certainly a few specimens of this butterfly, but on account of the cloudy sky they did not fly readily, but sat on the dry last year's stem of Artemisia, so that I failed in my object in respect to the overpositing.

Of Hylas in this locality, I saw to-day no single specimen. On male of Medon was distinguished by its small size and by its underside. The transverse row of occllated spots is placed so near the red fasci that on the anterior wings the innermost, and on the posterior wings

<sup>\*</sup> Only when I have had to feed the larvæ for a long while, before they were full fed, and gas them no sand, their cases obtain from the pieces of plant attached a rather greenish appearance; a large they are never like this.—P. C. Z.

l, 4th, and 6th, were quite confluent with the black bordering of is specimen consequently comes near to many specimens of s var. Salmacis &, only, that on the upper side it has more red and no white scales at all in the black transverse streak, the side shews the pale grey ground colour of our spring generation. n company with this species occurred a few specimens of Polyon-Dorilis (Circe St.), so common with us. From the last year's of Gnaphalium arenarium, which grows here everywhere in plenty, rted up Conchylis zebrana not unfrequently; yet it was already late , and hence, most of the specimens were females and few of them ood order. On the this-year's leaves I observed the larvæ of culatrix gnaphaliella plentifully; but I did not pause either for e, or to seek for the cases of Coleophora gnaphalii which are deeply

Of Clisiocampa castrensis I still found everywhere nests on the st different low plants; in many the larvæ had already separated. tys sticticalis was not scarce; one specimen I saw sucking from the ssom of Senecio vernalis, a plant which a few years ago had wandered her from the East. Ino Statices was already on the wing, thus at unusually early period for our neighbourhood, and especially conlering the recent inclement weather. Gelechia diffinis (scabidella, Z.) as already sparingly present, its food-plant growing abundantly on e margin of the canal. From the dry last-year's stems of Artemisia impestris, which here and there in the looser sand grows to very old lants, I started a female of Grapholita incana, a scarce species near Ieseritz; I also obtained one 2 of Conchylis Richterana. I also saw hree Fidonia fasciolaria (zebraria, Tr.), (only one specimen of which was very fine), sitting on the upper part of the Artemisia stems, with their peculiar posture of the wings. On the margins of the ditches I took two specimens of the spring brood of Lythria purpuraria, one, however, already in very bad condition; besides these, one specimen of Conchylis straminea (Tischerana), and several Elachista cygnipennella.

Towards seven o'clock I lay down for a quarter of an hour at a spot where there was no Thymus, and found whilst poking amongst the grass and other plants, three specimens of Gelechia superbella, which renders my conjecture as to its food-plant one which is scarcely probable.

On an open place abundantly grown over with Thymus, in the fir-

<sup>\*</sup> One obtains the image of both species most easily by collecting the plant in quantitles and placing it in a roomy box; there then appear also various other species, viz, Panc. pomposella, Sophronia humerella. Botys arealis, Thalpochares paula.—P. C. Z.

48 [July, 16

plantation along the above mentioned Carex-marsh, Pyrausta purpural was not at all scarce, but it could hardly fly on account of the deficient of sunshine. Only one bad female of Ancylosis cinnamomella occurre and Lycana Hylas, which probably sat concealed amongst the 'needle of the fir-bushes, did not allow itself to be seen, as already mentioned From a few old juniper bushes I beat out some Argyresthia arceuthing From the tufts of Festuca ovina I started not unfrequently Elachiet dispiellla, and thereby became perplexed as to my previous suspicion that Corynephorus might be the food of its larva.

On a narrow fallow-field, between the plantation and the marshy. meadow, I obtained towards sunset a beautiful male of Homacosom nimbella, and an equally beautiful & Conchylis posterana, which, in its style of flight and its whitish appearance whilst on the wing, shews the greatest resemblance to Conchylis zebrana, and amongst several Oxyptilus tristis, which had evidently flown over from the adjoining spot carpeted with Hieracium pilosella, was a single O. distans, which was instantly recognisable by its size and dark colouring. I afterwards started from the edge of the ditch a Platyptilus, which appears very like gonodactylus, but is strikingly smaller, and therefore deserves a close examination, especially since I have found specimens precisely similar in other places.\* I immediately suspected that there must be Tussilago in the neighbourhood, and truly found, on making a more accurate investigation, that a short distance from the spot were a few plants of Tussilago farfara, which had established itself here, and which had previously escaped my notice. From one bush of Salix repens I beat out after sunset several bad specimens of Phoxopteryx inornatana, H.S. As I returned along the side of the canal, I observed a male of Hydrocampa lemnalis flying briskly amongst the rushes.

# THE 19TH OF JUNE.

The weather being dull and windy, but warm, I set off about 3 p.m. to collect more specimens of Setina Kuhlweinii and Coleophora gnaphalii. Along the road, and afterwards on a grassy place near the canal, rather shaded with aspen bushes, the males of Epiniphele Janira were flying tolerably common, this species was now just making its appearance. Further towards the "Judenberg," I found on a weedy border of the road some Lycana Icarus (Alexis) and Adonis together, and at the edge of a lupine-field the Lycana Argus &. On the eastern wall of the "Judenberg" (which to-day I did not visit) an Agrotis subsequa, S.V.

In writing a notice, for the Entomologische Zeitung, of Wallengren's Treatise on the Swedish letail under the name of Platyptilus forfarellus.—P. C. Z.

na, H.) buzzed from a tuft of grass and escaped me. From tufts I also started several Gelechia terrella and psilella. Canonia Pamphilus was everywhere in numbers, but was only to be d from its repose; only during a short gleam of sunshine was it

tarily on the wing.

18691

Behind the "Judenberg" I started from the sheltered, dry, weedy of the road four Penthina rujana (rosetana), and Crambus passes and dumetellus in plenty; Cr. cerussellus seemed to be just ag its appearance, and was therefore scarce; of Crambus perlellus keepen one male with the anterior wings quite unicolorous white. In the larvee of Simyra nervosa of various sizes, not uncommonly on favourite food, Chondrilla juncea, also on Rumex acetosella, and on Euphorbia cyparissias; the smallest ones turned out afterwards, but exception, to be ichneumoned. Here I started one & Erastria idula. On the green stems of Artemisia campestris, and also on adjoining grass-stems, I found a few cases of Coleophora vibicigerella, the were probably mostly empty, as, whilst smoking amongst the ses of the Artemisia, I started up several of the imago, of which, the females were still in good condition. Of Fidonia fasciolaria varia) I met with several specimens both good and bad.

In the fir plantation near the peat-marsh the collecting was bad, was too much exposed to the west wind, which rapidly carried y from me everything on the wing. On the bushes I took only one pholita cosmophorana. From Thymus serpyllum I started by degrees eral specimens of Pyrausta sanguinalis, which, with the exception of w specimens, were still fine. Under the juniper bushes and the nches of the fir bushes which rested on the ground, started out echia umbrosella and terrella, probably mixed with other species; as vas still broad day-light, and I use no net for catching insects, the d carried nearly all of them away from me, Setina Kuhlweinii &, erally in good condition, flew from the grass stems in open places, only Q which I found on a small fir-bush was bad and good for hing. On a similar small bush I found a pupa between the eedles," and on a grass stem I found a larva of this species. On , isolated juniper bushes I obtained one Hypsolophus marginellus, and v many of the webs of Conchylis rutilana. Here I also took a worn ecimen of Steganoptycha neglectana\* of Duponchel, which had no

<sup>\*</sup> This neglectana till quite lately, when in arranging my collection, I examined Heinemann's ements of the differences between neglectana and deathana, passed with me for one species with hist-named, and was called by me, and by Fischer von Röslerstam, deathana, Prölich. I find that likely's description causes some difficulties, which may perhaps have some influence on the name. "fascia lata nivea, quam sequiter fascia tenuis media subinterrupta fusca, pars postica iterum

50

doubt been blown by the wind from the aspens of the "Judenber probably at five minutes' distance: there it may be freely beaten from the aspen leaves, from which I have also bred it.

On the leaves of a sallow bush, near the canal, I took a beauti of of the rather scarce Acidalia deversaria, H. S., fig 305—308. O grassy place, I started some Anerastia lotella, mostly already wo I also saw a of Crambus lutëellus and took a Sophronia parenthese On dry sandy places, where Hieracium pilosella grows very ability, Pterophorus tristis was already mostly in bad condition, show that the first brood was nearly at an end; the Pterophorus obscur which occurred singly amongst them, showed by their freshness to they certainly came out later than P. tristis.

I then went to the other side of the canal, which has quite to same soil and vegetation, in order to obtain some shelter from the will behind the embankment of sand at the side. On this embankment Gnaphalium arenarium and Artemisia campestris grow very plentifull on the former plant flew Botys ærealis and Thalpochares paula. By the aid of my cigar smoke, I induced Bucculatrix gnaphaliella to come of in numbers; Gelechia inopella also flew out not unfrequently, yet alread the specimens were mostly very bad, it was much more agile that the Bucculatrix, and was generally carried away by the wind. Son Gelechia pictella also turned up here, though there does not appear to any Cerastium round about for the larvæ to feed on. Of Stagmatopha pomposella, which, viewed superficially, seems so similar to it, and white probably came from the Gnaphalium, I took one specimen. Sophrom

ntrea," and "palpi albi," appear to me truly to refer to neglectana (Wilkinson, Heinemann The "alse basis" and the "fascia" designated as "fucea," which seems more applicable Wilkinson's dealbana, may be of less importance; since Wilkinson also speed of "fascia bass mediaque cinereo-obscuris." Of much greater importance is Frölich's notice, "caput cinerum," an edescribes much too inaccurately, and may by the "palpis albis" also have intended to designate t white colouring of the face. Probably he had confounded the two species, as so many Lepidopteri have since done!

The observations of Wilkinson and von Heinemann do not agree with my experience. Neglectan: according to Heinemann should appear in July, deathona from June to August. Of my 14 specime of neglectana, 7 have the date attached, according to which I took them at the end of May and begining of June; one 9 from Reinerz, thus at a considerable height above the sea level, I took June 20 specimens of deathona, Wilkinson, unfortunately only 4 have labels; these, however, are all in 1 fits ten days of July.

I have both species from Livonia; the two specimens in my collection from Tuscany are neglectar (Ent. Lettung, 1849, S. 239, dealbana "at the beginning of May not scarce," which also agrees with no one experience).

own experience).

I have reared the larva of this neglectana. I found it on aspen-twizs, which I had placed in wat in the room, in March, when the leaves were coming out; it was in a bad, which was already droopin from the effects of the larva feeding. It was about six lines long, rather thick, flesh-co-loured, rath inclining to dirty-yellowish. The head small, rather heart-shaped, with a faint depression abored shining black, thoracic shin in the intermediate, attenuated at the sides, shining black brown with a fine pale longitudal line in the middle. The spots are publishownish, two on ear abdominal segment, near the dorsal twosel, the hinder one farther from it than the anterior one; abore the sides of the s

la was not scarce. Of Coleophora gnaphalii I obtained to my only a few specimens, and those generally bad, although their ment takes place very irregularly. Here were also some Gelechia ella and beautiful specimens of Gelechia distinctella. I also saw horus pilosellæ for the first time this year. Fresh specimens of horus pteroductylus also occurred. The small plants of Artemisia such injured by the larvæ of Gelechia psilella, which was now on the wing, but they all appear to recover afterwards. In the laces where Thymus serpyllum grows very abundantly and quite found only a few of Gelechia artemisiella, but more frequently ia decorata and Pempelia subornatella. Of Ocnerostoma piniariella ite specimens of the second brood already occurred amongst the nd I took a beautiful Crambus pinetellus. Silene chlorantha was all of bloom. On many plants the radical leaves showed traces leophora otitæ, which were, however, no longer there. Probably Coleophoræ which were much worn, came from the same plant. e them for C. silenella. As at seven o'clock the wind abated, were plenty of insects to be caught; amongst them were females palus piniarius. Of the very beautiful Coccyx pinicolana, Dbd., I ned only one specimen. Batrachedra pinicolella, Cedestis farinatella, Hysselinella, and Gelechia dodecella, were plentiful. Of Blastobasis della, I only took a single bad specimen. Sciaphila Wahlbomiana bundant. Very annoying was the small white Coniopteryx, which by hundreds from the fir needles, and by its numbers prevented bservation of the Micro-Lepidoptera which flew out at the same

On a mossy place, I took one Butalis siccella. The larvæ of coampa castrensis occurred everywhere; they were all full grown sat on the weeds; most of them had probably spun up, and I found cocoon amongst the leaves of an Artemisia. Where there was he Rumex acetosella, good and bad specimens of Lythria purpuraria and scarce; one of had even the dark coloration of the spring ety on the anterior wings. I found one full fed larva on the blossom the acetosella.

About eight o'clock, when the best time for collecting had arrived, egan to rain heavily, and as the wind again rose, I was obliged to be off my chase. Returning homewards, I saw in the canal many drocampa lemnalis, which did not trouble themselves about the rain.

### THE 11TH OF JULY.

It was rather a windy day, the sky was overcast, with occasional

gleams of sunshine. At half-past three p.m., I started for the "Jud berg." On my way thither, I saw only Vanessa urticæ and Pieris m on the wing. From the stems of the aspens I beat a worn Gelec nigra (cautella, Z.), and not uncommonly G. populella; there were ma other Microptera which flew off, but they soon got away from me, a had merely the forceps, and it was such broad day-light. Coenonym Pamphilus now showed itself everywhere, here in the dry places, wh the larva feeds on Corynephorus, later in the peat meadows, and in ot places richly decked with vegetation. Pterophorus pilosellæ was scarce. I also took a bad specimen of Pterophorus serotinus, whence would appear that the first brood was nearly ended. Among the as shrubs, a male of Epinephile Tithonus was flying, the first specimen this species which I ever saw near Meseritz, and which must have co from a considerable distance, or I should certainly have discovered species here before. Nemotois minimellus, which in former years I] found gregariously on the hill between the ditches amongst Veron spicata,\* had descended from the heights, and a few specimens w flying over the ground principally clothed with Galium verum. Epi phile Lycaon (Eudora), the larva of which feeds in the fir woods amon the tufts of Corynephorus (from which I have bred it), flew in ple along with Hipparchia Semele, and a few Hipparchia Alcyone. Pampl Actaon flew quite with the style of P. Thaumas (linea) and P. line amongst Calamagrostis, and was not scarce. I also took a specim already wasted of Pamphila lineola which had flown out from the co fields, and a beautiful male of Syrichthus carthami. + A beauti Emydia cribrum sat on a grass stem; the eggs which she laid bef dying, fastened together as in Setina Kuhlweinii, I immediat turned out here to keep up the broad of this species, which, however is not scarce with us. Acidalia decorata, when I came near it, flew singly from the sand, when there was much Thymus serpyllum. Set Kuhlweinii was easily induced to fly from the grass stems and other } plants, but generally soon sought another place of repose; some spe mens were good and others bad. The females were, as usual, very diffic to find, as they sit near the ground and will not fly. From the fir bus I still beat the form of Sciaphila Wahlbomiana which begins to fly early as the middle of May. Around the branches buzzed a Grapholiv

<sup>\*</sup> Hence here on quite a dry place, whereas at Glogan I only found it on moist peat-mead especially amongst Scabiosa succisa.—P. C. Z.

t Of our white spotted Syrichthi with the margins entire, only malvæ, L. (alveolus, O.), appe in May; after it is over carthami comes out; and finally in August appears Alveus, H. (fruillum, and each of these species is only single brooded, -P. C. Z.

ana. Amongst the Gnaphalium, Sophronia humerella was scarce orn. Thalpochares paula, which readily flies and then settles on a stem, was abundant.

then went up under the tall fir trees in order to seek for the of Gelechia lutatella in the tubularly rolled leaves of Calama-epigejos; as I however devoted little time to the search, it was cessful. But many of the leaves showed unevenly eaten margins, lication that they had been visited by the larvæ of Pamphila. From the fir trees I beat out a bad male of Ellopia fasciaria. solitary old stunted bush of Sorbus aucuparia were many leaves cogether in balls which were now empty, but which according to revious experience had been tenanted by the larvæ of Gelechia ella. From the juniper bushes, Cidaria bilineata flew out singly. few plants of Agrimonia Eupatoria, I saw on many of the leaves a swellings; they were empty, probably they had been the dwell-of some beetle-larva.

I now went to a sandy field by the road-side, which had not been for several years, and was well clothed with Astragalus arenarius Gnaphalium arenarium. Here I hoped to find Gelechia inustella, he hope proved vain, but from a few isolated small fir trees, which been left in the middle of the field, I beat out a whole swarm of chia psilella, many worn specimens of G. umbrosella, and a pale ty of G. distinctella. On the dry turfed margin of the road, where larvæ of Simyra nervosa were now past, I found some Lythria wraria on the wing, and Crambus alpinellus was very abundant.

Whilst crossing the peat-meadow, I saw several Canonympha us and Crambus pascuellus in multitudes. As the force of the wind rented both collecting and observation, I sought the more sheltered is soft the fir plantation; but here it was so crowded with Crambus nellus that the observation of other species was rendered extremely cult. Together with several 3 of Setina Kuhlweinii I at last also and a female, but the margins of its wings were so tattered that I it; it had probably been blown by the wind against the fir needles. Leat Gelechia dodecella out of the fir bushes. Pterophorus pilosellae in not scarce, and on the old juniper bushes I took a few Conchylis ilana (it occurs in great plenty amongst them).

Whilst resting on a dry sheltered slope, I observed on the sand ongst Hieracium pilosella several specimens of a delicate bug with lated hoods (genus Derephysia), some of them in copulá, and one ecimen of the beetle Sarrotrium muticum. Two Butalis siccella hopped

out from the dry moss. I also found here the curious case-be whose case consists of an old hollow piece of stem, in which it can round with the greatest ease, and use the hind end of its case as front. As no Calluna grows here, the larva, if that be its prin food, must also eat other plants. In order to see to what kind of it would betake itself, I watched it whilst it was crawling about on ground amongst the plants and their fragments; it moved with a ried, tremulous, almost nervous motion of the thin anterior portion the body. But it did not appear to be seeking any nourishn so I could form no conclusion as to its food plant, and I allowed it retain its liberty.

Before sunset it became calm, but cold; hence the Lepidon came out now readily, but flew dull and heavily. Not unfreque Nyctegretis achatinella got up from amongst Artemisia campestris, but specimens were bad; also from the same plant, beautiful specimer Conchylis Kindermanniana, the 2 of which flies as readily as the Amongst these were two beautiful males of the second brood of chylis Richterana. Specimens of Coleophora vibicigerella were was Three plumes occurred here; piloselle-not uncommon; tristisfrequently; and of obscurus only one specimen; they were easy to and to catch in the twilight. Amongst several Anerastia lotella w started from the grass stems, one & was still in good condition. Il found one worn female of Melissoblaptes bipunctanus low down amor the Artemisia. Amongst the abundant Gelechia terrella on the si of the canal, I took two Gelechia lutatella, which I recognised imm ately by their whitish anterior legs. I sought for them here, as I ka the species occurred here, having previously observed the rolled lead the Agropyrum repens which grows in plenty at the spot. I also t here a good specimen of Botys frumentalis.

After the sun was gone down, the insect world appeared as the dead, and I had to beat about a good deal in order to induce anythe to fly. Crambus alpinellus, however, along with two specimens, Homeosoma nimbella, without heeding the cold air, visited the bloss of Jasione montana.

As I returned homewards along the dry grassy border of the rewhere there were much Achillea millefolium and only a little Artemi there flew up in the dark two Conchylis dipoliella, which I had before found near Meseritz; they had quite the flight and the appeara of Conchylis Kindermanniana, for which indeed I took the first specir, when on the wing.

Stettin.

SCRIPTIONS OF NEW SPECIES OF DIURNAL LEPIDOPTERA.

BY ARTHUR GARDINER BUTLER, F.L.S.

# GENUS AMATHUSIA.

AMATHUSIA OTTOMANA, sp. nov.

Alæ suprà fuscæ, anticæ fasciá disco-costali violaceá; posticæ caudá atá: subtus roseo-fuscæ, striis septem anticis, sexque posticis divergens, brunneis, ocellis duobus posticis permagnis, fusco-ochraceis.

Allied to Amythaon, but differs entirely in regard to the shape and tion of the violet band of the front-wings, which begins on the a, close to the base, continues beyond the end of the cell, then we obliquely towards but not reaching the outer margin, from the turns off, tapering to just below the first median nervule; a wing being thus ornamented with a large violet crescent. The dewings are shot with violet. The under-surface of the wings is any the same as in A. Amythaon, but of a more pinky hue and with zer ocelli.

Inhabits Borneo (Sarawak, Lowe).

In the collection of Herbert Druce, Esq.

This does not agree with the descriptions of Felder's A. Pylaon Porthaon from Java, his Indian species being probably the true & nythaon of Doubleday (but not of Westwood.) The figure in the Driental Entomology," represents a species with a much narrower diduler violet band on the front-wings, leaving a large brown space at expex; the brushes on either side of the body seem also to be unually developed. There can be little doubt that this is a distinct eries, for which I propose the name of A. Westwoodii.

The type of the figure is said to be in the collection of H. G.

arrington, Esq.

I hope soon to be able to figure A. Ottomana, and the other species are described.

# GENUS PAPILIO.

-Papilio Kerosa, sp. nov.

¿P. Paradoxæ affinis, Euplæam Amymonem simulat. Alæ suprà scæ, anticæ obscuriores, purpurascentes, punctis areæ apicalis pallidioriis: subtus fuscæ, punctis septem anticis, sex posticis, sub-marginalibus, bis: corpus nigro-fuscum, albo-punctatum.

Wings above: brown, darker towards the base, the front-wings

beautifully shot with bright purple; a spot near the end of the cand five ill-defined streaks terminating in whitish points upon tapical area, violet; body blackish-brown, the head and thorax speckly with black.

Wings below: paler brown, darker towards the base, with a seriof seven white sub-marginal points in the front and six in the hin wings; body black-brown, spotted with white; expanse of wing 3" 8"

Inhabits Sarawak, Lowe. Coll. Druce.

P. Kerosa closely resembles Euplæa Amymone, of which it probably an imitation.

#### 2.—Papilio Zanoa, sp. nov.

§. Præcedenti affinis, Euplæam Callithöem simulat. Alæ sup fuscæ, ared basali obscuriori; anticæ nitidè cærulescentes, puncto singu discoideo punctisque discalibus quinque pallidè cæruleis, sub-marginalib octo albis: posticæ punctis sex sub-marginalibus albis. Subtus pal diores, punctis anticis octo, posticis septem (septimo punctulo minutissis adjuncto) albis: corpus nigro-fuscum, albo-punctatum.

Wings above: brown, darker towards the base, the front-win brilliantly shot with blue, the front-wings with a spot near the end the cell and five just beyond, pale blue; a series of eight sub-margin spots decreasing in size towards the anal angle; the hind-wings wi six white spots; the body blackish-brown, the head and thorax spots with white.

Wings below: paler brown, the front-wings with eight and thind-wings with seven sub-marginal white spots, a minute white poitouching the seventh spot; the body blackish-brown, spotted wiwhite; expanse of wings, 4" 2"

Inhabits Sarawak, Lowe. Coll. Druce.

We do not possess an *Euplæa* corresponding to this from Borne it is, however, exceedingly like *Euplæa Callithöe* from Northern Indand probably is an imitation of a Bornean form of that species.

#### 3.—Papilio Juda, sp. nov.

3 9. P. Paradoxæ Telesicloque affinis, Telearcho persimili minor autem, maculisque sex tantum in serie alarum anticarum disc cærulescentibus. Alæ posticæ maris punctis quinque sub-marginalit albis, striis cæruleis inclusis,—fæminæ striis sex septemve nigris, macu albis hastatis terminatis, subtùs punctis minimè violascentibus, ornat Corpus nigrum, albo-punctatum.

57

Wings: brown, darker at base, the apical area in the male shot th blue; in the female with purple.

Male: front-wings with a large spot near end of cell, and series of six ceal and eight sub-marginal spots, all, excepting the three nearest the ex, pale blue; hind-wings with five white points enclosed in blue state dashes near the apical margin. Wings below: brown, with white sub-marginal points in the front and seven in the hind-ngs.

Female: basal area streaked with dusky whitish; front-wings the a sub-costal blue and a sub-terminal white spot within the cell, a hastate spots on the disc, blue, irrorated with white, and eight b-marginal white spots; hind-wings with six to seven black streaks, minating in arrow-headed white spots upon the inter-nervular folds; the fringe of all the wings varied with white. Wings below: brown, the blue spots replaced by whitish ones, the basal streaks more evident, herwise as above; body blackish-brown, spotted with white; expanse wings, 3 3"11"; 2 4"5"

Inhabits Sarawak, Lowe. Coll. Druce.

This species appears to be a local representative of *P. Telearchus* Hewitson; like which, *Telesiclus* and *Paradoxa*, it closely resembles th sexes of *Euplæa Midamus*, Linn.

Zoological Department, British Museum, July, 1869.

Capture in Devonshire of Hydroporus minutissimus, Germ., Aubé.-To retroduce into the British list a species which has already been expunged is at all nes a pleasure, but in the case of Hydroporus minutissimus it is peculiarly so to yself, since I was the person on whose authority it was originally admitted. ree examples, which were given to me many years ago by the late Mr. W. Clear, Cork, and which he believed were taken by himself near that city, formed the sis for a short notice in the "Annals of Nat. Hist." (vol. xviii, p. 453, 1846), nere I described them as the exponents of what I inadvertently conceived to be new species, under the trivial name of trifasciatus. But subsequent enquiries It little doubt on my own mind that Mr. Clear's specimens were in reality Connental ones; and so, after remaining for some years in the catalogue amongst uncertain natives of Britain," the species was altogether struck out, as having en admitted upon evidence which was manifestly insufficient. During a late cursion, however, to Slapton (about seven miles to the westward of Dartmouth), single example of it was discovered by my wife, amongst the small submerged ingle at the edges of the Ley; and, being thus warned of its presence, we connued to search patiently until a tolerable series had been obtained. Its habits e precisely similar to what I have observed in the Canary Islands, and elsewhere,e species delighting in shallow, clear water, amongst the shingle of which it incipally resides.

58 [Aug

I may add that the same locality produced many Coleoptera of tolerable rari amongst which Homalota longula, Heer (=thinobioides, Kraatz), was perhaps t most important. We likewise took sparingly Scopaus Erichsoni (= lavigatus, Wa Cat.), Apion confluens, Kirby, and Amalus scortillum; as also, more plentiful Lionychus quadrillum and Dermestes undulatus.—T. V. Wollaston, Teignmout June 30th, 1869.

Notes on Coleoptera at Folkestone .- Having spent the greater part of last Jun at Folkestone, a place so productive of good species to the Lepidopterist an Hymenopterist, I come to the conclusion, in spite of cold, windy, and rain weather prevailing during the greater part of my stay, that it, and the district round it, is equally good for the Coleopterist. Had it not been for the bad weather I expect that many species then only occurring to me by single examples would have been more plentiful. Never having been to Folkestone before, and having n one to guide me, I unfortunately did not investigate the best part of the far-fame "Warren;" upon which (under stones) I could find nothing better than Plinthu. which was anything but plentiful, and very often broken. With it were Myrma donia limbata, Pterostichus ruficollis, Lebia chlorocephala, Xantholinus tricolo and such moderate things. The only other beetle worth naming was Phytonomia trilineatus, common on Lotus. Thanks to the kindness of the Rev. Mr. Tylder I was enabled to find, near Westenhanger, Bembidium Sturmii, Anchomenus liven and Poöphagus nasturtii, three species not falling to the lot of every one. Ceuthoi hynchus tarsalis appeared to be as hard to get as ever. Walking many miles find its favourite Sisymbrium (on which the to me hitherto rare var. dispar of Telephorus lividus was very abundant), and beating many pecks of that ungain plant, I managed to secure a short row of the beetle for my cabinet, though it too eleven days hard work before I got the first specimen. It occurs in the immediate neighbourhood of Folkestone, and at Hythe, and I found one specimen at Saltwoo Castle, on Alliaria, in company with alliaria, Bris. (inornatus, Wat.). On the Sisymbrium, C. cyanipennis was very plentiful, C. constrictus very rare, and ( sulcicollis and quadridens abundant. Of many other species of the genus, chrysan themi, melanostictus, and cochleariæ only are noteworthy. Of the allied Ceuthor hynchideus, melanarius (common on Nasturtium), terminatus and frontalis occurred and I would here note my conviction that Chevrolatii-in vain sought by me though I obtained troglodytes in every possible size, variety, and splendid condition -is a good species. Remembering a former capture of Ceuth. marginatus wit six-jointed funiculus, I took a large number of that somewhat abundant species and had the satisfaction of finding four similar examples. There seemed to be n punctiger among them. I look upon these as monstrosities only, among which class must certainly be placed a Rhynchites germanicus which I took here, with each antenna bi-clavate.

In a pond at Hythe, I was fortunate enough to obtain a small row of Telma tophilus sparganii, certainly one of our rarest beetles; it was accompanied by caricis and typha, and by two specimens of brevicollis, Aubé, a species new to me and most distinct. A similar pond, near "Cæsar's Camp," at the base of the hills covered with flags, reeds, water lilies, and other flowering aquatic plants, much

orted to by L. Adonis at its shallow edges, and abounding with dragon-flies, duced (besides swarms of common Telmatophili and Cercus rufilabris), the gnificent Chrysomela menthastri in some numbers.

It was, however, by sweeping the boundary line between the waste and cultied lands, on the slopes of the inland row of cliffs running from Folkestone rnpike to Westenhanger, that I made most of my good captures. Here I once twice found the giant Molytes germanus (also near Saltwood), and Otiorhynchus ebricosus, the males of which much simulate the hitherto non-Britannic cipes; and here & Drilus absolutely swarmed, exhibiting the greatest conceive discrepancy in point of size. Of some hundreds that I saw, all were males; I the closest and most constant work (among snails, at evening and by day, by seping and other examination of the banks and plants whereon the male arred), never produced a female. I imagine, however, that I was too soon; for, er my departure, Mr. Purday, of Folkestone, found a female, not accompanied by pulative &, in the middle of a path. This Q is now in my collection. General seping along these ridges produced many good things, amongst them being malota notha (a very Encephalus in its carriage), H. scapularis (not very unamon), Hypocyptus seminulum; Hydnobius punctatissimus (three of the very e small testaceous but quite mature form), Anisotoma litura (pale form), rather amonly, and calcarata rarely; Choleva anisotomoides, Saprinus virescens, lurking Helianthemum-flower, like Cryptocephalus hypocheridis, and evidently under that d disguise voraciously intent; Cryptophagus badius and setulosus, Antherophagus lens and nigricornis, Malthodes atomus, Trachys troglodytes (a very large dulloured specimen), Mordellistena pumila (extremely common, of all sizes), M. pusilla ually excessively rare, -to be known from small pumila by its brown pubescence l longer antennal joints), and M. abdominalis; Caliodes exiguus on Geranium, uncommon, and generally distributed over the district; four species of Bruchus, ereof the best, seminarius, was very abundant; Apion filirostre (as usual, singly), idum, Waltoni, punctigerum, pomonæ, and many others, common; Baridius icornis, a few, on Reseda lutea; Gymnetron pascuorum (absolutely swarming on adgate road cliffs), G. melanarium and labile, Orchestes pratensis and Amalus rtillum, common; Rhamphus, Phytonomus pollux and suspiciosus, and Hylastes curus; Cryptocephalus lineola and bilineatus rather rare; labiatus, aureolus, and pocheridis most abundant (the latter easily to be known from equally small eolus by its proportionately much shorter scutellum); Cassida sanguinolenta (rare), l nobilis (plentiful); Platynaspis villosa (rare), Oömorphus, Scymnus sp.—? (like all Mulsanti, with red bands almost making four spots); Mantura Matthewsii, nerally distributed, Aphthona hilaris, green var., Bryaxis Helferi, and many other nmoners.

I was much struck by the prevalence of dark forms; the black *Telephorus* par above alluded to and black *Isomira murina* being far commoner than the bes; I also found one or two *Lema cyanella* nearly dull black, a black  $\varphi$  of ridius picicornis in cop. with blue  $\mathcal{F}$ , and three black *Rhyzobius litura*.

The above general notes (which do not by any means exhaust my captures), w, I think, that under better auspices, Folkestone is a good Coleopterous ality.—E. C. Rye, 7, Park Field, Putney, S.W., July, 1869.

Eros affinis bred.—After considerable trouble, I have succeeded in breeding Eros affinis, from small larvæ obtained at Killarney in 1866; and I have also brit from Sherwood Forest larvæ, found last year. The larvæ resembles that of faurora. I have also bred Tiresias serra from Sherwood.—J. Kay Hardy, Il Embden Street, Hulme, Manchester, July, 1869.

Note on Saperda scalaris and other Coleoptera at Sherwood Forest.—In Jun last I spent a fortnight at Sherwood, where, amongst other things, I found a sing & example of Saperda scalaris by beating an oak. I also brought home six pupi found in company under oak bark, one of which did not come to maturity, two turned out a fine pair of S. scalaris, and the remaining litree were Phymatod variabilis. From another pupa, found under rotten birch, I bred Phlæotry Stephensii. In the Forest, at large, I found a few Conopalpus testaceus and van Vigorsii; also Cistela ceramboides, Erya atra, Leptura scutellata, &c. As far as know, the oak is an unrecorded pabulum for S. scalaris.—J. Kidson Taylor, Thor Cottage, Longsight, Lime Grove, Manchester, July, 1868.

"Fireflies in Kent."—Under this heading, in "The Times," of 17th inst
"A.A." records the capture, at Ashford, of a luminous specimen of Lampyri
italica, and particularly calls attention to its soft yellow light, so different to the
cold blue gleam of the English Glow-worm. It is to be hoped that some furthe
evidence will be forthcoming as to the identity of the species in question; though
after the occurrence of Phosphanus at Lewes, it will not be safe to treat the above
record as a light matter.—Eps.\*

Trichius fasciatus in South Wales.—It may be of interest to some of your readers to know that I have turned up this species in considerable numbers. I shall be glad to return specimens to anyone sending a box with return postage. It flies rapidly and deftly in the sunshine, hawking from flower to flower with considerable power of wing, and reminding one somewhat of Sesia bombyliformis, though without the wild "abandon" in its flight which characterizes that captain of rovers.

My gardener, Robert Stafford, found it very locally confined to some marshy glades in a wood near my house, where the trees have been cut, and the undergrowth is some two years old, and where thistle-blossom and Veronica offer it a profusion of flowery attractions. Once settled on a blossom, it may be taken easily with the fingers, but has the power, when annoyed, of emitting a pungent though inoffensive smell.

Two examples, out of 150 recently taken, have the shoulder spot stopping short of the suture, thereby simulating the rarer T. abdominalis; and it is to such a variety of fasciatus that the single specimen mentioned by me years ago in the "Intelligencer" must be referred.—John T. D. LLEWELYN, Ynisygerwn, Neath; June 21st, 1869.

<sup>\*</sup> Since the above was in type, we observe in the same Journal, 20th inst., a record of the capture of tropical fire-flies at Caterham;  $\delta$  L. noctiluca is probably the cause of both these notices, though a third writer suggests that the Ashford fire-flies may be some he brought from Coblentz and turned out at Dover!—Eds.

New localities for Bagöus inceratus.—In the beginning of last June, I took oral examples of this species (recorded as British by Mr. Rye, in the June No. of Magazine), in a brackish water ditch in the Isle of Sheppey, about two miles a Sheerness. It was very local, only occurring in one little spot.

I have since taken a single specimen of it at Southend, in decaying sea-weed, the shore.—G. C. CHAMPION, 274, Walworth Road, S., July, 1869.

Note on Anax formosus, &c., at Lee.—A few days since, I discovered that the clay-pits, by the side of Burnt Ash Lane, were frequented by a host of agon-flies, of which Anax formosus, not generally a common insect, was the st conspicuous, mixed with Lib. depressa and 4-maculata in about equal num-s, and an occasional L. cancellata, &c. I had never before seen A. formosus on wing, and a more magnificent sight than that of a score of the males hawking retwo small ponds, could scarcely be imagined. The females were mostly enged in oviposition, and for this purpose they thrust the abdomen into the water the extent of about half-an-inch.—R. McLachlan, Lewisham, 13th July, 1869.

Note on Enoicyla pusilla.—I have two mutilated males of this species (put ide with other odd insects and neglected) which I remember to have captured in a numerical ending the autumn, some eleven years ago, several miles from Worcester. I can now clear localities in this county where I have found the species.—J. E. FLETCHER, orcester, 2nd July, 1869.

Observation on Cecidomyia taxi, Inchbald.—Since Bremi (Beitrag zu einer Ionographie der Gallmücken, 1847, p. 25) surmised that the artichoke galls so fiten met with on the branches of Taxus baccata belonged to a Cecidomyia, Mr. eter Inchbald has given in the "Ent. Weekly Intelligencer" for 1861, pp. 76—77, an account of the Œconomy of the Gall-midge, and a description of both sexes of the Imago."

Having just bred the insect from specimens sent to me by my kind friend Mr. H. W. Kidd, of Godalming, I beg to offer the following memoranda concerning its netamorphosis, &c., leaving out all points which by Mr. Inchbald's paper have been satisfactorily settled.

No cocoon is spun within the closely-fitting nest of whitish leaves composing the interior of the gall. The pupa lies bent on the back, with the head directed upwards.

An immature pupa examined on the 31st of May, was about a line long, deeply notched between thorax and abdomen, the back of the latter very rough, and of a dull tile-red colour, the strongly arched thorax polished, red; the eyes black and shining; the wing-, leg- and feeler-cases entirely and closely pressed against the body, and all these parts deep red; forehead obtuse, notched in the middle vertically; the basis of the feeler-cases quite smooth; the outer leg-cases reaching as far as the penultimate segment, wing-cases only half so far; the outer (fore-) leg-cases the longest, the middle ones shorter, the inner (hind-) leg-cases the shortest; border of the nine abdominal segments flattened, and, if viewed from above, somewhat darker than the body itself.

On the 2nd of June this pupa had attained the following mature state:-The

whole upper part of the body and appendages had turned very dark brown, whit the abdomen retained its dull tile-red hue; the tips of the leg-sheaths were standiclear of the body, which latter had become somewhat contracted, the wing a feeler-cases were still lying closely along the body.

The mature pupa forces its way straight up the bract of the leaves, and why the image has escaped, the white transparent pupal skin is left protruding from t gall. The empty pupa displays the feeler-sheaths detached from the head, n unlike a pair of curved horns.

The imago seems to belong to the sub-genus Cecidomyia of Loew, and t neuration of its wings would place it between Cec. rosaria, Loew, and C. ripare Schrank, according to Winnertz's figures (Linnæa, vol. viii, tab. 2, fig. 1 and 2).

Specimens bred in captivity and kept on yew branches lived only two attree days.

On the 6th instant I observed the larvæ of an ichneumonideous insect encase within a full-grown larva of this Cecidomyia, leaving only the last three segmen of the latter free. Notwithstanding the presence of this parasite, the Cecidomyia larva had strength enough to assume the outward guise of the pupa; but scarce had this been accomplished, when the full-fed inmate made its exit through a opening between the thorax and abdomen, leaving its victim to perish.—Alber Muller, South Norwood, S.E., June 16th, 1869.

Note on the larva of Lycana Arion.—I have this year succeeded in rearing th larva of Lycana Arion, which I think is as yet undescribed. I watched the butterfl at last, and saw it depositing ora with a business-like sort of flight, one at a time on the blossoms of the wild thyme. Seizing upon the plants, I soon discovered what the ova were like, and within a few hours collected about 100 of them. The ovur is like that of all butterfly ova, of an oblong shape, but not always deposited i a standing position. It has no ribs, and is either yellow-orange or white (similar t those producing Cardamines). The larva emerged within a week, to the hour, and fed up pretty rapidly.

It is onisciform, and slightly flattened on the sides, the back being rather convex. Head very small, black or blackish-brown. Body greenish, the dorsa and sub-dorsal lines represented by a row of three black spots on the middle of each segment. Legs almost imperceptible. Feeds exposed on flowers of Thymus serpyllum. Having taken all possible precaution towards the rearing of the insect I shall be most happy to give any further particulars.—E. Dember, Cheltenham College, July 11th, 1869.

Are Lycana Medon and Artaxerzes distinct species?—The question as to the relationship between Lyc. Medon and Artaxerzes, which Professor Zeller is endeavouring to solve, opens up the larger one—What evidence ought to be taken as proving two or more forms to be varieties of one species? Can there be any but that of the one having been reared from the eggs of the other? Of course eggs of a variety might produce other forms not obtainable direct from the type. Intermediate forms, and even similarity of large, are not conclusive, and only justify us in saying "probable varieties." I use the term varieties in the restricted meaning

gyed by Staudinger in his Catalogue—i. e., local races or forms, which in some that (more or less extensive) displace the type. Now there must be some or places where these originated, and where, in all probability, both forms (lo-exist; and there only could we with any certainty expect to obtain the one of the eggs of the other.

believe the form Medon is never seen in Scotland, nor that of Artaxerxes on sontinent; but there are certain districts in England where both (as also translate) forms are said to be taken. Could not entomologists in these localities at the eggs of both forms, and see whether both can be obtained from the same not? This will involve a little more trouble than coolly assuming their identity. The fact of Artaxerxes never having been met with in any locality in either there or Alpine Continental Europe, goes far, I think, to prove its being distinct, ris respect it is unique among our Rhopalocera, all our others, whether species arieties, being met with on the Continent. I intend, if possible, to send eggs artaxerxes to Professor Zeller, but I do not expect they will produce any other m, even with the change of food-plant.—A. Wilson, Young Street, Edinburgh, Ully, 1869.

On Lycana Artaxerxes.—I received on 8th May of this year, by my friend, offessor Hering, of Stettin, four larvæ of Lyc. Artaxerxes, sent from Edinburgh ressly for me. Three were full grown, so that one was a pupa already on the factor of the Helianth. vulgare does not grow in the vicinity of Stettin, in order to do eathing towards saving it from perishing by starvation, I offered it some young nots of the Erodium cicutarium, and lo, it bored directly into a flower bud, which on following day, I found eaten out. In the sequel I saw it really consuming, she good appetite, the unopened blossoms of that plant. While it was thus sing and growing, its colour gradually changed to a healthy green one. As late the 22nd May, it changed to a good pupa, though it had before fallen down from the place where it had attached itself. On the 9th June, a small Artaxerxes, \$\frac{7}{2}\$, the its appearance.

Now I had expected that the different food which it had eaten for more than that days would have exercised some influence and a little altered its markings, as to become more like Medon (Agestis). But no, it is the completest possible taxerxes, having a considerable pure white spot in the middle of the fore-wings, the white spots of the under-side, with no trace of a black centre; even on a upper-side of the hind-wings a faint white dot is to be seen.

As the larva of Artaxerres, in the case of necessity, feeds on Erodium, I suppose at that of Medon (Agestis) will do so with the leaves of Helianthemum, and I link it worth while to try; but to obtain a more satisfactory result than I obtained a account of so short a time of feeding one Artaxerxes larva, one should give that unusual food from the earliest time possible. On such grounds as Medon ababits, the plants of Erodium, at the end of June, or rather in the beginning of pring, must be cautiously cut next to the root, and shaken on a white sheet, by hich means the larva will easily be obtained; and the younger they are, the tter they will be for the experiment. The reward, perhaps, may be that the

Medon of South England, by changing its food for some weeks, may change? Artaxerwes, and the specific identity of the two forms will then be for ever in testably demonstrated.—P. C. Zeller, Stettin, 24th June, 1869.

Life history of Polia nigrocincta, and description of its larva.- Eggs lait July and August, on the sea-pink, Statice armeria; first larvæ hatched Septen 25th; fed on sea-pink in preference to several plants offered (there can, indeer no doubt that sea-pink is its proper food-plant), and continued to feed upon i intervals throughout winter, growing but very little after October, when a were about three-tenths of an inch long. Color: clear, slightly pellucid, emer green, with a light spiracular line. Shape: long in proportion to their bree the dorsal lines scarcely perceptible. About May, the colour changes to a see what more pellucid light mineral-green, with the head, face, and trophi glassand the shape is slightly flattened to the spiracular line, then becoming n cylindrical with dorsal lines double, but only faintly indicated; between the do and the sub-dorsal line (which is also double, but still more faintly traced i the dorsal marks) there are three minute light dots, one above and two be upon each segment. The spiracular line is whitish-green, well-defined upon upper edge and toned off into the light pea-green of the under-part of the lar feet light green, claspers slightly tinged with olive. At this stage, the larva is i of stretching itself out upon a stem of the sea-pink or grass during the night-tiand at such times the divisions of the first eight segments appear as yellow rings. Gradually the larva changes colour; first a dark tinge of ochreous ol pink creeps over it, and it begins to show its preference for the flowers of the pink, which is just coming into bloom. Resting on the stems with its claspers, turned over the top of the flowers, it fairly devours them; commencing with petals and stamens, it will, in a very short time, cat an entire flower-head, then gnaw the stem down, after the manner of Leucania littoralis on star-gri until it has to move lower down the stem itself as it feeds. Growing rapidly n it soon becomes less flattened, stouter, with the segmental divisions more c stricted and slightly pellucid, and changes to a smooth light pinkish or rich fa colour, tinged with olivaceous (an indescribable color); the head hairy, brown than before, but still glass-like; the dorsal line a little better defined, still don on the centre of the segments, but joined together at each of the constriction forming a faintly defined chain-like mark down the back; the sub-dorsal line only be seen now with a good glass, under which the coloring of the space between these lines may be seen as marmorate brownish markings or atomic suffusatio and the three segmental spots before named are now light, with a dark upper edg the spiracular line is light, but less pronounced than before, the spiracles bei composed of a dark ring with an ochreous inside. Beneath, the larva is lig greenish, with horn-like feet. One peculiarity of this larva is a singular violet peach-bloom appearance which often passes over it, especially over some of t first and last segments, as it moves. To sum up, it is one of those larvæ whi have no salient points to rely upon, and this want adds to the difficulty description; it certainly has no resemblance to the larva of any other Polia whi has ever been in the British List, but rather approaches some of the true Hade larvæ, especially, when mature, resembling in general appearance certain larvæ

gracea, being, however, of a more highly finished appearance; or perhaps it ids more of the larvæ of the Heliothidæ. When full fed, the larva measures y two inches in length, rolls in a ring when disturbed, is a true nocturnal er, and subterraneous in its habits, burying in the light vegetable soil or within lose tufts of the sea-pink. During the day time, it spins a slight silken web to earth or amongst dead plants as a puparium, and changes immediately to a brown, smooth, stout pupa, ovoid to the end of the wing-covers, then sharply tal to the anal segment, out of which spring two rather large hooks. It only rins a few weeks in the pupa state, the perfect insect appearing in July and mst, frequenting the rocky shores of the Isle of Man, near Douglas and man. On the continent, this species varies very much, some specimens being cult to separate from P. flavocincta, whilst others want the yellowish tones ch enrich that species; but I have not yet seen or heard of a single specimen ar dark form occurring anywhere except in the Isle of Man, and I think that, the Manx specimens are all of one type, I shall call them "Var. statices."— . Gregson, Rose Bank, Stanley, Liverpool, 10th July, 1869.

Description of the larva of Plusia interrogationis.—On June 9th, 1869, I had pleasure to receive the larva, nearly full fed, of this pretty species, from Dr. F. hanan White, who had taken several in Inverness-shire, and who during the wious autumn had swept up a few young examples from heather in Ross-shire, of which he kindly sent to me in October. These were barely one-third of an a long, and presented the same pattern as the mature larva, being of a full sen colour with the sub-spiracular stripe of sulphur-yellow very conspicuous by fed occasionally on heather till the end of November, and rested on the ms in a curved posture. Only one, however, lived on to nearly the end of March, it was then half-an-inch long, and, no young shoots appearing on the heather, it fed title on a blade of grass and sallow catkin; but one morning I had the mortification seeing it hang lifeless from a stem.

The full grown larva of interrogation is measured nearly one inch and a quarter length when stretched out, though it generally had the anterior half of its body ched upwards, being thick in proportion to its length, tapering gradually from a sixth segment to the head which is smallest, the hinder segment tapering but the. Viewed sideways, the back of the twelfth segment rises a little to the iddle, and slopes rapidly downwards from thence to the anal extremity, the two in of ventral prolegs being equally developed.

The ground colour is a bright and deep full green, but paler on the back, ough the dorsal stripe is as dark as the sides, and begins wide, narrows, then wells wider to an angle in the middle, decreases similarly, and widens towards be end, and is finally edged throughout with greenish white. This is its course brough all the segments, except the thoracic, where it is more simple and linear.

The sub-dorsal line is greenish-white, finely edged with darker green; and aidway between the dorsal and sub-dorsal is a tortuous line of greenish-white on thich are the usual tubercular warts of the same colour, each bearing a fine brown air. The sub-spiracular stripe is sulphur-yellow, and the belly and legs are not quite o green as the space between the sub-spiracular and sub-dorsal.

The head is green, finely freckled with greenish-white, and having a black

streak round the sides to the mouth. Some very small yellow scattered tubers on the ventral surface.

On the 11th June, it began to spin its pale grey silken oval cocoon among the stems of heather, and a few days later the pupa became dimly visible through the stems of heather, and a few days later the pupa became dimly visible through the stems of the

The perfect insect emerged on July 8th.—WM. Buckler, Emsworth.

Capture of Hadena assimilis.—On the 30th June last, I took a specimen of above insect, on the 10th inst. another, and on the 11th inst. a third, all at sugar Inverness-shire.—Nicholas Cooke, Spring View, Liscard, 16th July, 1869.

Occurrence of a Dicrorampha new to Britain; D. plumbana, Sc.—Some tisinee Mr. Hodgkinson, of Preston, kindly sent me examples of a Dicroramge evidently new to our lists. One of the specimens (a?) I forwarded to Profes Zeller, who has most obligingly furnished me with its name. He writes as followed concerning it:—"The Dicrorampha? I can by no means separate from what "consider to be D. plumbana, Sc. (Zachana, H., Blepharana, H.-S.): identi "specimens were abundant in Upper Carinthia, before and after the beginning "June." Mr. Hodgkinson on capturing the insect at once saw that it was son thing new to us. He again met with the species at Witherslack, in the beginning for the present month. Dr. Staudinger gives ulicana, Gn., as a synonym of plumban but Mr. Hodgkinson's insect is certainly not the ulicana of our lists.—H. G. Knac Kentish Town, July, 1868.

Addition to the list of Irish Lepidoptera.—Coccyx Splendidulana, quite new the Irish fauna, has been, by some error, omitted in my list.—Herbert Marson Gloncester.

Dianthacia compta & D. Barrettii at Howth.—I have lately been successful capturing a few examples of D. compta, and several of D. Barrettii. Thinking to the occurrence of the former especially will interest your readers, I send you to note.—E. G. Meek, 4, Old Ford Road, E., July 11th, 1869.

Note on the occurrence of Dianthæcia Barrettii.—In June, 1868, I visited thill of Howth, in Ireland, for the purpose of taking D. Barrettii in its origin locality, and succeeded in securing a good series of specimens, varying much size. On reflection, it struck me that "Port-Jack," in the Isle of Man, resemble the best locality I had found for it at Howth so nearly in its Flora and Fauna (far as I had then ascertained), that I determined to try there for D. Barrettii my next visit to the Island. A few days afterwards, I went to the little kingdor and proceeded direct to "Port-Jack," and, before I slept, had secured and set fair specimen of Barrettii. This year I have again taken it there, so that we menow hope that this hitherto exclusively Irish species will be obtained in the Isle Man, by all who work for it, at less cost in money and time than it can be hope for in the Irish localities.—C. S. Gregoon, Stanley, Liverpool, July 12th, 1869.

lotes on Lepidoptera at Howth and Wicklow.—Having a few days holiday, I the that I could not do better than spend them in the "Emerald Isle." I do in Dublin on June 19th last. After breakfast, I walked down to the Sand at Dallymount. I worked them during the whole afternoon, but took nothing, ps in consequence of the rain which came down steadily all the time.

on Monday, June 21st, I went to Howth, after receiving instructions from Nore (of the Royal Dublin Society), to whose disinterested kindness in pointing ocalities I am indebted for a comparatively successful campaign in a bad n. I tried the Bailey Hotel, but found I could not be "taken in," so made most comfortable and reasonable lodging at a house just above the hotel, e I would advise any entomologist to stay, as it is close-for Howth-to the ing ground. Ask for "Cabena's," at the top of the hill. In due course, I to work, and got a few Eupæcilia albicapitana and Sericoris littorana in the noon. In the evening there was more rain. As I took up my position for night on the side of the cliff, I had the pleasure of meeting Messrs. Meek and h, of London. We watched the Silene maritima flowers most of the night, ite the teeming rain. When we gave up, I found I had taken one Dianthæcia ettii amongst a few other things. We spent our days in setting our insects, in hunting the cliffs and searching for pupæ of Sesia philanthiformis; of th, although Mr. Meek and I worked hard for many hours, we found no e. The nights were devoted to the Silene flowers from "dusk to dawn." bout further comment on Howth, I give a list of species caught during the t time I was there. Mr. Meek will send you an account of his usual good , so I will not refer to his capture.

M. bombyliformis (fine series), Hepialus velleda, V. maculata. Eurymene braria in a wood adjoining the Old Bridge near Lough Dan. Melanippe trist, E. palumbaria (highly coloured), Thyatira batis, A. rumicis (fine var.), M. eps, P. anea, Argyrolepia Baumanniana, and several common species.

June 24th. This afternoon, Mr. More and I set off for that lovely county below. After some three hours ride on an outside car, we arrived at Murphey's tel, Roundwood, which we made head quarters. During the next four days we ited and collected in or near to Roundwood, Lough Dan, Lough Luggala (L. Tay), eral woods and bogs on the banks of the River Armamoe (which river and the es afforded us some nice trout fishing), Glendalough, Seven Churches, &c. I gared each evening, but with poor success. The locality is a very likely one, I if worked well, would, I am sure, repay; it is easy of access, and not expensive. Insidering this is the worst season I have known, I think I did pretty well there, follows: Acidalia subsericeata, Larentia salicata, Eup. venosata (very large), Eup. mata, and an Eupithecia I do not know, (perhaps Eup. distinctata), M. galiata, capsophila, D. Barrettii, P. subornatella, Eupacilia albicapitana, &c.

After our return to Dublin, we spent one evening in the Botanical Gardens, Glasneven, which are a great feature of the Royal Dublin Society. I got little them, but the night was very cold.—T. J. Carrington, York, July, 1869.

Note on Lithosia caniola.—On the 1st March Mr. Stainton kindly sent me, om Milan, five larvæ of Lithosia caniola, about one-third grown. They did not sach me for a week, and having been without food, air, or light during the interval, ere in a sickly condition, and all except one shortly died.

The remaining larva went to pupa May 5th, and has this day (June 18 produced  $\, \varphi \,$  moth in all respects identical with specimens from Howth, but perha little above the average in size.

Mr. Stainton informs me that his attention was drawn to some dark objects the white wall of one of the interior passages of the hotel at Florence, which first sight he had passed, thinking they might be Julidæ, but on examination the proved to be larvæ of caniola: there were more than a hundred on one wall, if there was no visible food. On sending them to me he suggested that, from a position in which found, they ought to feed up if simply "placed on the door stellard that real green vegetable food would probably be too strong for their digestic as they could have had no experience of such rich diet. However, considering a cooler climate of England, I ventured to supply the gentle stimulant of a stellard cooler with a minute lichen, and also an occasional leaf of clover. I was not a to observe that the clover was eaten, nor the lichen diminished in quantibut still the larva throve on its meagre diet.

The moth has emerged a month earlier than it does at Howth, although remained in the pupa state six weeks, or more than double the period usua occupied by the Irish insect. The greater heat of the weather at the period of t year (July) in which the Irish caniola undergoes pupation possibly explains t discrepancy.—EDWIN BIRCHALL, Newlay, Leeds, June 18th, 1869.

# DESCRIPTION OF A NEW SPECIES OF LEPTALIS (LEPIDOPTERA RHOPALOCERA).

#### BY W. C. HEWITSON.

LEPTALIS DESINE, nov. sp.

3 Upper-side, dark brown. Anterior wing with four white spots, the first an largest divided by the nervures into five parts, one of which is within the cell, the second between this and the anal angle, the third (which is trifid) and fourth a sub-apical; a small linear spot of orange near the middle of the inner margi Posterior wing, where it meets the upper wing, broadly lilac-white, polished, and below this a large oblong spot of brilliant orange.

Under-side, paler brown. Anterior wing with the spots as above, the low half pale lilao polished white, marked by a large spot of opaque white. Posterior wing crossed (parallel to the outer margin) by a central band of yellow spot

I am indebted to Mr. Belt for this beautiful species, from Chontales, i Nicaragua. It is of the form of L. Critomedia.

Oaklands, Weybridge.

July, 1869.

ENTOMOLOGICAL SOCIETY OF LONDON, 5th July, 1869. F. SMITH, Esq., Vice President, in the Chair.

Albert Müller, Esq., of South Norwood, was elected a Member.

Mr. Jenner Weir exhibited an enormous tick taken off a Greek Tortoise.

Mr. Colville Barclay related his experiences concerning the damage done to th sugar-crop in Mauritius by the "Pou à poche blanche."

fr. Smith exhibited a coloured drawing of the luminous larva shown by him at st meeting, which Dr. Candèze and Professor Schiödte (present as visitor) ed to belong to the Elateridæ. He also exhibited a living field-cricket, found Farnham; and a series of Pissodes notatus from Bournemouth.

The Hon. T. De Grey exhibited three examples of Cosmopteryx orichalcea from en Fen; and a series of a Tortrix which Professor Zeller held to be a dark form of peapsa juliana; it had been bred in April, from pupæ in moss on beech-trunks, Mr. De Grey expressed himself rather uncertain as it to its identity with juliana. The Secretary read a long and interesting letter from Mr. C. A. Wilson, of aide, with notices of various South Australian insects.

Mr. C. M. Wakefield (present as a visitor) gave some account of the insectation of New Zealand, and remarked that its prevailing feature was the paucity becies, as in Mammals and Birds. Mr. Fereday had only obtained about 14 or becies of Diurnal Lepidoptera and 250 of moths. He himself had only noticed t 120 species of Coleoptera. Trochilium tipuliforme had been introduced into Zealand with its food-plant. Mr. Wakefield had lost all his collections of New and insects through the burning of the ship "Blue Jacket."

Mr. A. R. Wallace read a Continuation of his "Notes on Eastern Butterflies."
Mr. Edwin Brown communicated a paper "On the Australian species of acha."

This was the last meeting before the autumn recess.

# ON COPTODERA AND THE ALLIED GENERA.

# BY H. W. BATES, F.Z.S.

In examining the species of *Coptodera* in my collection, I have and some features in their structure which seem to have escaped the ention of all authors who have written upon that genus. These I w propose to make known, together with the descriptions of many w species.

The genus belongs to the Truncatipennes division of the Geodephaga d group Pericalinæ, distinguished from the Lebianæ by the length of e labrum, which covers in great part the mandibles, and is often nger than broad, and by the simple penultimate joint of the tarsi. he species of Coptodera all live on and under the rotten bark of trees, unning with great rapidity; their surface is free from pubescence and generally metallic in colours, and ornamented with flexuous bands of pallid hue. Their habit of searching for prey under close-fitting bark associated with a flattened form of body and especially flattened and engthened mouth; the mandibles being long, depressed, very acute and scarcely curving towards the apex, and the ligula and paraglossa, ogether with the labrum, lengthened and flattened in the same proportion. The two terminal joints of the maxillary palpi form together an

70 [Au.

elongated fusiform figure, the penultimate joint being much shorthan the terminal one, and the latter narrowing to the apex; terminal joint of the labial palpi is also fusiform and slightly truncate the apex. The elytra are truncated, as in all the allied genera.

Dejean, and after him Lacordaire, has stated that the mentum Coptodera is provided with a large central tooth; this is an err which was avoided by Schmidt-Göbel, who characterized the gen anew before the appearance of Lacordaire's first volume of "Genera." In fact, the emargination of the mentum in the genus simple, as I have convinced myself by the dissection of seven speci-An error of this kind throws an unpleasant uncertainty on all charters drawn from hidden parts of the mouth of the smaller genera Geodephaga, as given in the chief works on this great group. A charter, which has been overlooked by all authors, is the structure of t anterior tarsi in the males; these are slightly dilated and furnish beneath with double rows of scales, precisely as in the great grou Anchomeninæ and Feronianæ. This character is interesting, as it al us, in conjunction with others, in judging of the true affinities of t group. In fact, I think there can be no doubt that the Pericalia (together with the greater part of the Lebianæ) are closely allied to t Anchomeninæ; the discovery of genera exactly intermediate b tween the two groups, one of which is described in this pape completing the evidence. The form of the ligula and its pan glossæ, given as one of the principal characters of the Pericalin varies a good deal in allied species; but all agree in possessing broathin, and elongated paraglossæ and a narrow ligula; the paraglossattached to the apex of the ligula and surpassing it in length. TI variations consist in the extent to which they surpass the ligula; one species, C. polygona, they are, as in the genus Eurycoleus, but ver little longer; in others, they are much longer, and tend more or less t curve inwards, and embrace the tip of the ligula. I do not think the these modifications are at all of generic value, as hastily assumed b Before they are claimed as generic characters, the some authors. mouth of every species in a genus should be examined; and this bein practically almost impossible, such characters should be used wit great caution.

The following genera form part of the group Pericalina; in all as far as I know, the males have squamous soles to the anterior tarsi and in Catascopus the first joint of the middle tarsi is also sometime squamous. The male of the fine Catascopus cupripennis has the breas in the middle, and anterior thighs, densely hairy, as in many male Agrae

# A. Mentum not toothed.

1. Claws denticulated.

rcoleus. Mandibles short and strongly curved; paraglossæ scarcely longer than the ligula; body very broad and depressed; elytra minutely punctured, not distinctly striated; colours yellowish with distinct black spots; thorax obliquely truncated on each side of the base.

Tropical America.

rodera. Paraglossæ more or less surpassing the ligula; body oblong, distinctly striated; base of thorax straight, or nearly so.

Tropical and sub-tropical America, Africa, Asia.

NOGLOSSA. Paraglossæ greatly elongated and converging at the tips; thorax distinctly lobed in the middle of the base.

Tropical America.

CTEIS. Doubtful if distinct from Coptodera.

Madagascar.

CHTHERUS. Paraglossæ of the same length as ligula; surface alutaceous, not metallic; thorax heart-shaped with projecting hind angles.

Tropical Asia.

2. Claws simple.

RICALUS. Eyes very large.

Tropical Asia.

B. Mentum toothed.

1. Claws denticulated.

LCOTHERATES. Facies of Anchomenus; black, glabrous.

Tropical America.

DOPHLŒUS. Claws with two or three very small, indistinct teeth;

Australia.

2. Claws simple.

DBODONTUS. Tooth of mentum very large; colours blackish with red spots.

Africa.

AYREOPTERUS. Tooth of mentum moderate; body broad and greatly depressed; colours not metallic.

Tropical Asia, Madagascar, Africa.

BSINÖE. Tooth of mentum very short and broad; labrum much broader than long; surface coarsely punctured, not metallic.

Africa.

Catascopus. Colours metallic, brilliant, without pale markings.

Tropical Asia, Australia, Africa, America

MISCELUS. Body elongate, colours black; facies of Feronia.

Tropical A

I doubt whether Eucheila, Rhombodera, and Scopodes can be cluded in the group, owing to the widely different form of the labra and in Eucheila, the very large, horny ligula; but other gen some of them apparently undescribed, will have to be incorporated Mormolyce, included by Lacordaire in the Pericalinæ, constituted distinct sub-family.

COPTODERA POLYGONA, n. sp. Testaceo-rufa, elytris nigris, marilaterali fasciisque duabus angulatis, apud suturam haud interrupa margine lineâ nigra separatis, flavo-testaceis: thorace parvo, lat bus late marginatis, utrinque bi-angulatis; elytris latis, conveprofunde striatis, striis vix punctatis. Long. 8-9 millim. 1 elytr. 41 millim. 2.

A species resembling Eurycoleus in the shape of its thorax and the large of its elytra; the latter, however, are deeply striate like the majority of Coptod Bright testaceous-red, with the sole exception of the elytra, which are black v the lateral margins and two irregular belts of a yellower-testaceous hue, one one-third and the other at three-fourths their length; these belts are not in rupted at the suture, but do not reach the pale lateral margin, being termins by the ninth interstice, which is black. The head with the eyes is rather narro than the thorax; the labrum is not much elongated, but about as long as bro the antennal joints are cylindrical, and the surface of the head is polished impunctate, with a distinct curved fovea in the middle of the forehead. thorax is very small in proportion to the elytra; it is widened from the apex nearly the middle, then narrowed in an incurved line to the hind angles, wh are situated at a distance from the actual base, the latter being straight or eve little emarginate in front of the yellow scutellum. The elytra are wide and sor what convex, the shoulders broadly rounded and advanced, the sides with a broadly flat margin, and the apex obtusely truncated; the surface is deeply sub-puncts striated, with convex and very finely alutaceous interstices; the two pale denta belts leave three black belts of the ground colour, the basal and middle one be of about the same width as the pale fasciæ, and the apical one forming a lar black spot on each side the suture.

Taken at Ega, Upper Amazons, running amongst fungi on t bark of a dead tree in company with *Eurycolei* and *Stenognath melanarius*.

COPTODERA LATIPENNIS, n. sp. Testaceo-rufa, elytris flavis, fasc duabus dentatis nigris, altera basali, altera pone medium; thora ut in C. polygona, parvo, utrinque bi-angulato, elytris profun striatis, striis minute punctatis. Long. 8 millim. Lat. elytr. millim. \(\varphi\).

grees precisely in form and sculpture with C. polygona, differing only in the eve of the large black spot or fascia at the apex of the elytra. The whole ynd limbs are of a testaceous red hue, glossy on the impunctate head and r, and the elytra are deeply striated with fine punctures in the stria and v, alutaceous, but shining interstices; the flattened lateral margins are testacyellow, and the ninth interstice, as in C. polygona, is black from the shoulder the apex; the second yellow belt occupies the apical fourth of the elytra, it broadest on the 3rd and 5th interstices; the belt nearer the base is broadest in 3rd, 4th, and 7th interstices.

St. Paulo, Upper Amazons.

TODERA CUPREOTINCTA, n. sp. Depressa, testacea, æneo cupreoque tincta, vertice thoracisque disco cupreo-fuscis, nitidis; elytris fusco-leupreis, fascia altera lata prope basin, apud suturam interrupta, 'altera angustiori prope apicem, flavo-testaceis, fasciis e lineis elongatis formatis; capite (thorace angustiori) supra subtilissime alutaceo et punctato, thorace transverso, quadrato, lateribus antice extus rotundatis; elytris profunde striatis, striis subtiliter punctatis, 'apice sinuato-truncatis. Long.  $7\frac{1}{2}$  millim. Lat. elytr.  $3\frac{1}{2}$ . 3 2.

Allied to Copt. bifasciata, Putzeys, but differs apparently in the much deeper of the elytra, on which the punctures are only perceptible by the aid of a verful lens. The general colour is testaceous-yellow, brown on the flanks of the ha, and glossed with metallic lustre on the upper-surface, the metallic colour g more vivid on brown patches on the crown and on the disc of the thorax. I thorax is quadrate, much broader than long, and moderately rounded on the santeriorly, with the hind angles not prominent, and the base line nearly light. Scutellum yellow. The elytra have three coppery- or brassy-brown belts, two pale ones, and the flattened lateral margins are also pale: the pale belts divided into elongate lines by the brown colour of the strize, the first belt being errupted at the sutural interstice has only seven of these lines, and the sub-apical te eight, the ninth interstice being brown throughout; the lines on the interstices and 6—8 of the first belt are nearly half the length of elytra. The truncature of elytra is strongly sinuated. The antennal joints are long and cylindrical.

Common at Ega, under the bark of dead trees.

DPTODERA RELUCENS, n. sp. Brevior, depressa, testacea, suprà lævissima, æneo-micans; capite vitta thoraceque vittis duabus cupreo-fuscis; elytris ovatis, striato-punctatis, striis vix impressis, interstitiis latis, planis, cupreo-fuscis, nitidis, fasciis duabus, e lineolis brevibus formatis, pallidis. Long. 6 millim. Lat. elytr. 3 millim. 3 \, \chi.

Apparently still more closely allied to *C. bifasciata*, Putz., than the preceding is distinguished from *C. cupreotineta* by the scarcely impressed clytral striæ and be broad flat interstices. The whole upper-surface is highly polished, and has a filliant metallic tinge, varying from glossy-green to coppery-red; the vittæ along

the middle of the head from the epistoma to the occiput, and on each side of central line of the thorax, are nearly black, with a brassy-green tinge. The this strongly transverse, quadrate, with the sides rounded anteriorly. The basal and lateral margins of the elytra are testaceous; the pale belts are compose very short lines forming together strongly zig-zag fasciæ.

Ega; rare.

COPTODERA LEBIOÏDES, n. sp. Pallidè testacea, capite obscuriore, ely viridi-æneis, fasciis duabus flexuosis, pallidis, profunde punct striatis: thorace basi medio late producto; antennis articulis brevi crassis, sub-moniliformibus. Long. 4 millim. Lat. elytr. 2 mil

Closely allied to the preceding, but smaller, the middle part of the bass the thorax distinctly produced and rounded, and the joints of the antennæ n thicker and shorter. The general colour is pale testaceous, with the elebrassy-green; the pale belts are narrower than in *C. cupreotineta*, the first be interrupted by the green sutural interstice, and both separated from the pale lat margin, as usual, by the dark ninth interstice.

Ega. In my own and the Baron Chaudoir's collection.

COPTODERA LINEOLATA, n. sp. Piceo-brunnea, labro, palpis, anten pedibusque testaceis; supra vix nitida; thorace transverso, quadre lateribus modicè rotundatis, angulis posticis haud prominentibelytris profundè punctato-striatis, fasciis macularibus duabus, è lineparvis, discretis, formatis.

Long. 5-6 millim. Lat. elytr. 23-millim. & 9

Destitute of metallic lustre; head (with the eyes) narrower than the thoi the latter scarcely narrowed behind, and but little rounded on the sides anterio the posterior angles not prominent, and the base line nearly straight. The process of the elytra are formed of remarkably distinct and pale lineoles; five form the first belt (2 short ones on the 2nd and 3rd, a much longer one on the 4th, an shorter ones again on the 5th and 6th interstices), and 6 or 7 forming the seconal of which are short and separated from each other. The labrum is much elongar and the antennæ are formed of slender cylindrical joints.

New Guinea. Collected in numbers by Mr. Wallace.

COPTODERA CYANELLA, n. sp. Suprà lætè cyaneo-viridis, thoracis elytr rumque marginibus lateralibus rufis, his maculá utrinque discoide prope basin, fasciaque postica abbreviata communi valde curvai testaceo-rufis; corpore infrà piceo-nigro, oris partibus, antennis per busque testaceo-rufis. Long. 7 millim. Lat. elytr. 3\frac{1}{2} millim. \( \frac{1}{2} \)

A handsome species allied to others described by Schmidt Göbel from Burms. The head with the eyes is narrower than the thorax; the latter is transver quadrate, rounded outwards in the middle, and with strongly projecting hind angle.

wabrum is much elongated and sulcate in front as in the Stenoglossæ. The elytra wheeply striated, without perceptible punctures and with convex interstices, they waste in shape, widely margined in the middle of the sides, and there tinged a rufous: the colour above is dark brassy-blue or greenish; the body beneath is the body beneath in the bod

New Guinea; collected by Mr. Wallace; I have specimens also teted as from Batchian.

ptodera spinipennis, n. sp. Magna, supra unicolor, cupreo-ænea; corpore subtus femoribusque æneo-piceis, antennis, oris partibus, tibiis tarsisque rufo-testaceis; capite thorace multo angustiori; hoc transverso, quadrato, lateribus antice angulatim dilatatis, angulis posticis distinctis, basi recto; elytris oblongo-elongatis, lateribus marginatis, obliquè sinuato-truncatis, utroque angulo spinoso; suprà profunde sub-punctato-striatis, interstitio septimo basin versus sub-carinato. Long.  $10-11\frac{1}{2}$  millim.

This fine species is distinguished by the long spine into which each angle of the meature of the elytra is prolonged in both sexes. The colour varies from piceoustwith a brassy-lustre, to brilliant coppery with brassy reflections, and sometimes head and thorax are glittering brassy-green whilst the elytra are cupreous.

Upper and Lower Amazons.

PRODERA CHALCITES, n. sp. Oblonga, suprà cuprea, capite thoraceque parvis, æneis; hoc transversim quadrato, lateribus rotundatis, angulis posticis distinctis, basi fere recto; elytris oblongo-ovatis, profunde punctato-striatis, valde sinuato-truncatis, angulis haud productis: corpore infra nigro-piceo, antennis, oris partibus pedibusque rufo-piceis.

Long. 8-10 millim. Lat. elytr.  $3\frac{3}{4}$ -4 millim. 3?

Scarcely differs from C. spinipennis, except in the absence of spines from the gles of the truncature of the elytra; in general appearance it much resembles the ppery species of Anchomenus and Colpodes. The head is small, triangular, and urrower than the thorax, which again is much narrower than the elytra. The meral colour above is shining coppery, with the head and thorax generally of a general to the content of the cont

Common at Ega.

OPTODERA RUTILA, n. sp. Latior, flavo-testacea, elytris (margine laterali excepto) læte viridi-æneis, tenuiter punctato-striatis.

Long. 9 millim. Lat. elytr.  $4\frac{1}{2}$  millim. 3  $\circ$ .

A very handsome species, distinguished by the smooth surface and brilliant reen hue of the elytra. The head is rather large, but not quite so wide as the lorax; the labrum is not much elongated but nearly square, notched in the middle f its front edge; the antennæ are robust, but the joints remain cylindrical. The elytra are broad, considerably dilated at three-fourths the length, sinuate-trunca at the apex and margined on the sides, the dilated margins are yellow like the re of the body, the surface (including the basal margin) is brilliant unicolorous brass green. slightly sericeous, owing to the fine transverse-striation of the surface; the strice are very feebly impressed and punctate. The teeth of the claws a remarkably long; but leave a long apical portion of the claw, as usual, simple.

Ega; coursing amongst Boleti, on dead trunks.

COPTODERA ENEORUFA, n. sp. Rufo-testacea, elytris æneo-micantibe profunde sub-punctato-striatis, capite thorace angustiori, labro elongat apice sulcato, thorace transversim quadrato, lateribus rotundatis, angui posticis haud prominulis, basi recto.

Long. 7 millim. Lat. elytr. 3 millim. & Q.

The colour of the body and limbs is entirely testaceous-red, with the exception of the elytra, which are bright æneous, in most examples with the reddish groun colour shining through; the colour sometimes passes to golden, but never cupreous. The thorax has two indistinct brassy-brown spots on the disc. The antennæ are rather stout, with the joints oblong.

Ega; also at Pará.

COPTODERA DEBILIS, n. sp. Parva, rufo-testacea, pectore abdominisq lateribus fuscis, elytris sub-punctato-striatis, fuscis, disco (striis fusc exceptis) testaceo. Long. 5 millim. Lat. elytr. 2½ millim.

Testaceous-red, sides of the sterna and abdomen dark brown, elytra also da brown, with the disc paler, the striæ of a duskier hue. Head nearly as wide as t thorax, the latter broader than long, sides rounded, base arched, the sides bei oblique. The elytra are deeply striate and the striæ faintly punctured.

St. Paulo, Upper Amazons.

COPTODERA VERSICOLOR, n. sp. Lata, suprà cuprea, viridi et aur micans; capite magno, sed thorace paulo angustiori; hoc valde tran verso, lateribus rotundatis, angulis posticis haud prominulis, basi rect elytris brevibus, sinuato-truncatis, profunde punctato-striatis, fasc valde flexuosis macularibus duabus, prima (utrinque interrupta) maculis quinque, secunda (interdum apud suturam interrupta) e macu septem, formata; corpore infrà piceo-rufo, lateribus nigricantibu antennis, labro, palpis pedibusque piceo-rufis; labro antice, ut in CATASCOPO, acute inciso. Long. 9 millim. Lat. elytr. 5 milli

Very similar to C. depressa, Dej., of southern Brazil; but much shorter a the thorax in porportion much broader and less narrowed behind, with the poster angles not prominent. The macular fascize are very similar; the sutural interst is narrow, and in the hinder belt sometimes free from yellow spots, and all the speare short except that on the fourth interstice in the anterior belt.

Not uncommon at Ega; also Pará.

thorace latiori; hoc quadrato, lateribus antice angulatis, dein sinuatoangustatis, angulis posticis rectis; corpore subtus, pedibus, capite
thoraceque viridi-æneis, elytris violaceo-cupreis, oblongis, sinuatotruncatis, angulis externis dentiformibus, suturalibus spinosis, suprà
profunde punctato-striatis, fasciis duabus macularibus testaceis;
antennis obscurè piceis, articulis basalibus æneis.

Long. 
$$7\frac{1}{2}$$
—11 millim. Lat. elytr.  $2\frac{1}{2}$ — $3\frac{1}{2}$  millim.  $\circ$ .

Distinguished by the very prominent eyes, which make the head wider than proadest part of the thorax, in this respect resembling C. Schaumii (Chaud.) Costa Rica. The under-surface of the body, femora, parts of the month and I joints of the antennæ are dark brassy-green; the head and thorax of a more iant green, the head with five or six sharp furrows on each side near the eyes; thorax is nearly as long as broad, and is remarkable in not having the sides inded, but produced into a distinct angle, not far from the front margin, and ewhat simuted both before and after the angle. The labrum is sharply notched is front edge and is of a brassy-black hue. The elytra are sinuate-truncate, a the lateral angles of the truncature produced into a broad sharp tooth, and sutural angles into a narrow spine; the pale belts are formed of linear spots; anterior belt of six, all short, except that on the 4th interstice, which is four est he length of any of the others, and the posterior belt of seven (not including indistinct spot on the sutural interstice), all of moderate length.

Ega and Lower Amazons; in the rotting and broken bark of the ughs of large trees, especially in places where these lie across each ner, where the species sometimes occurs in plenty. *C. megalops* fers from *C. Schaumii* (bifasciata, Schaum, Berl. Ent. Zeits., 1860, iii, p. 4), in the richer violaceous-copper hue of the elytra, the sence of green tinge towards the base, and of the additional yellow of near the base on the 5th interstice, besides other characters.

Besides the numerous species above recorded, the following scribed species occur in the Amazon region:—

C. luculenta, Erichs., Consp. Ins. Peru, p. 69. Common at Eg:1.

C. picea, Dej., ii, p. 458. Generally distributed throughout the untry, but rare.

# Genus Stenoglossa, Chaudoir.

This genus was founded by Baron Chaudoir on certain very small potodera forms, chiefly on account of their having a very long and arrow ligula, with elongate paraglossæ convergent at their extremities. In dissecting St. dromioides, I find his description accurate, but do ot see that these organs differ essentially from those of several true loptoderæ. The mentum, however, differs from them, in being much

narrowed anteriorly, with narrow and short side-lobes closely embrach the base of the ligula or labium. A better character still is the for of the thorax, which has a decided basal lobe, the base on each si being obliquely sinuate-truncate. The form of thorax, however, different from that of the true  $Lebi\alpha$ , in which the sides are widely dilat and flattened out. Several  $Coptoder\alpha$  show a trace of the basal lot and it is doubtful if the present genus can be maintained. The specific have precisely the same habits as the  $Coptoder\alpha$ .

Baron Chaudoir himself pointed out the species in my collective belonging to his genus *Stenoglossa*, none of which agree with the ohe described, viz., *C. variegata*.

Stenoglossa pallida, n. sp. Flavo-testacea, elytrorum basi fascia; tenui maculari valdè flexuosa pone medium, nigris, striis fusi Long.  $3\frac{1}{2}$  millim. Lat. elytr.  $1\frac{1}{3}$  millim.

Wholly of a testaceous-yellow hue, with the exception of a few slender dumarks and spots on the elytra; these consist of a dark border along the basincluding the shoulders and irregularly limited posteriorly, a few blackish spot covering the large marginal punctures, and a very flexuous narrow macular bellittle behind the middle; the strise are all dusky, the colour deepening near apex; they are deeply impressed and punctate, with the interstices convex. The transverse quadrate, sides moderately rounded anteriorly, posterior angles pronent, base obliquely sinuate-truncate on each side, leaving a broad median lobe.

Ega, many examples.

STENOGLOSSA FULMINANS, n. sp. Flavo-testacea, capite obscuric elytrorum fascia maculari, valdė flexuosa, maculisque apicali nigris, striis fuscis. Long.  $3\frac{1}{2}$  millim. Lat. elytr.  $1\frac{1}{2}$  millim.

Very closely allied to C. pallida, differs in no respects except in the posit of the black marks of the elytra; the base is not black, whilst, on the other ha there are two black patches at the apex which nearly touch the lowest angle of flexuous fascia. The head, in the only example I have, is darker than the group colour of the body; in five examples of C. pallida, it is of the same clear testace yellow as the rest of the body.

Bahia; collected by Mr. Reade.

STENOGLOSSA ATRICEPS, n. sp. Minima, suprà flavo-testacea, capi maculis elytrorum prope basin et apicem, fasciaque flexuosa media; obscure fuscis; corpore subtùs antennisque, basi excepto, fusc centibus, pedibus fusco-nebulosis; elytris medio valde dilatai Long.  $2\frac{1}{2}-3\frac{1}{2}$  millim. Lat. elytr.  $1\frac{1}{2}-1\frac{3}{4}$  millim.

A minute species, distinguished by its dark brown or black head, and by flattened margins of the elytra being remarkably dilated about the middle.

surface of the thorax and elytra, the femora and base of antennæ are pale cous; the thorax is transverse quadrate, not much rounded on the sides, but red behind, with the hind angles projecting and the middle of the base ly produced. The blackish markings of the elytra consist of three spots are base arranged in a triangle, three or four oblong spots on the interstices apex, and a middle strongly flexuous narrow band extending without intern across both elytra.

Ega; I have a specimen also from Rio Janerio and have seen s in Mr. F. Grut's collection.

OGLOSSA DROMIOÏDES, n. sp. Oblonga, piceo-brunnea, labro, palpis, untennis basi pedibusque pallidis; elytris fasciis duabus flavis, altera latissima, sub-basalis, scutellum attingens, altera angusta, valde flexuosa, postica; thoracis marginibus anticis et posticis medio flavis. Long, 4 millim. Lat. elytr, 13 millim. & 9.

on oblong flat pitchy-brown species resembling many Dromii. The parts of the touth, base of antennæ, the legs and middle of the under-surface of the body allid; the middle of the fore and hind margins of the thorax are reddisheaus; the thorax is small, very little wider than the head, rounded on the and narrowed posteriorly, with the hind angles distinct but not produced; trace both of head and thorax is opaque, owing to the fine sculpture. The have a large pale sub-basal band or patch, widest along the suture, along it generally extends to the scutellum (also pale), and deeply sinuated on each on behind; the belt is lineated by the dark brown striæ, and has on the 3rd strice two dark spots covering the ordinary large punctures; near the apex is astomary narrow flexuous band, which is divided into spots by the brown striæ.

A common species under bark in the Amazons; also found at a by Mr. Reade.

# Phleotherates, nov. gen.

Facies of Anchomenus, but of shorter figure than is usual in that as; body depressed, surface naked, shining. Labrum quadrate, a broader than long; mandibles thick, trigonal; apex very little ed; mentum semi-circular, with deep emargination and large in the centre, angles of the lateral pieces spinose; ligula elongate, ow, horny; paraglossæ connate, much broader and surpassing it ewhat in length; palpi moderately short, apical joints cylindrical, cate, penultimate joint of maxillaries about one-half the length of apical one and continuous in outline with it. Antennæ short, robust, orm, pubescence commencing at the tip of the 4th joint. Thorax thate, basal line nearly straight, elytra more than twice the width the thorax, narrowly margined, sinuate-truncate. Legs moderately it; tarsi filiform, claws strongly curved and denticulated for half

80 [Septe

their length; three joints of the anterior tarsi slightly dilated, frin beneath with long hairs and furnished with a double row of squa. This genus belongs to the *Pericalinæ* in the length of the lab and the length and width of the paraglossæ, attached to the ligul far as its anterior angles, and in the simplicity of the 4th tarsal j. It is closely allied to *Stenognothus*, a genus hitherto considered undoubtedly an *Anchomenus* form, and which also has connate p. glossæ, broader and longer than the ligula; but in *Stenognothus* tarsal claws are quite simple. The two genera bridge over complete the interval which separates the two sub-families.

Phlæotherates nigroficeus, n. sp. Oblongus, postice latior, depressus; piceo-niger, nitidus, corpore subtùs cum palpis pedibu pallidioribus; elytris profundè striatis.

Long. 9 millim. Lat. elytr. 41 millim. &

Black or piceous, with the lateral margins of the thorax and elytra red piceous; the labrum, palpi and antennæ also dull reddish, with the 3rd and joints of the latter darker; the legs are reddish, with apex of femora and sometimes black; the whole median portion of the under-surface reddish. forehead has two large distinct punctures on each side near the eye placed t versely; the thorax is finely strigose, and the elytra have the usual three punctures on the 3rd interstice.

Found coursing amongst *Boleti* on dead tree-trunks, in comp with *Stenognathus* and *Coptodera*, but much rarer; Ega and the Tap

# SYNONYMICAL NOTES.

- Coptodera antipodum, Bates, Ent. M. Mag., 1867, p. 78, is a Philophia
- Coptodera guttata. Chaud. (Agonocheila id., Chaud.), Von Harold Gemminger's Cat., is not a Coptodera, but most probably distinct from Philophlæus.
- Coptodera viridis, Solier, has no resemblance to Coptodera; it is retered twice in V. Harold & Gemminger's Cat., under Dro and Coptodera; it belongs to the genus Lobius, Motschul
- Stenoglossa corticalis, Chaud., V. Harold & Gemminger's Cat nowhere described, and should be erased.
- Thyreopterus lutosus, Newm., V. Harold & Gemminger's Cat., Philophlœus, and occurs at Melbourne and Adelaide.
- 40, Bartholomew Road, Kentish Town, N.W., 12th July, 1869

TES ON BRITISH HYDRADEPHAGA; WITH DESCRIPTIONS OF NEW SPECIES OF HALIPLUS AND HYDROPORUS.

# BY DAVID SHARP, M.B.

Having recently made a careful examination of the British adephaga, I publish the following descriptions and notes in order sist the Coleopterists of this country in giving names to certain as hitherto undetermined in their collections.

IPLUS STRIATUS, n. S.

Rufo-ferrugineus ; prothorace vagè punctato, basi utrinque impresso ; is subtiliter striato-punctatis, striis æqualiter fusco-lineatis.

Long.  $1\frac{1}{3}$ -line.

Equal in size to the small varieties of *H. ruficollis*, which it resembles in r, but from which it may be distinguished by being much narrower at the ders, and by the black lines on the elytra showing no tendency to being at any places into spots: also closely allied to *H. fluviatilis*, but to be uguished from that species by its smaller size and darker colour, and by the lines on the elytra being throughout of even width, whereas in *fluviatilis* lines are sub-interrupted at places.

Found in great numbers in a pond a few miles from Dumfries, in pany with *H. ruficollis*, and also in other localities near that town.

Obs.—I take this opportunity to remark that, in my opinion, fluviatilis and ruficollis are but races of one species, and that, if view be adopted, H. striatus may be considered as a third race. H. fluviatilis be considered as a distinct species from H. collis, it will be necessary also to keep H. striatus separate. Indeed, ugh H. fluviatilis and ruficollis are so variable that I have some eimens which appear to me completely intermediate, H. striatus bears to be very constant, and I have no difficulty in distinguishing from any of my vars. of either of the two other insects.

TROPORUS OBSOLETUS, Aubé (Icon., &c., v. 298).

This rare and distinct Hydroporus can be only compared with H. ferrugineus, ph. (victor, Aubé.); it is readily distinguished from that species by its narrower m, less variegated elytra, the quite impunctate disc of its prothorax, and its re sparingly but more distinctly punctured elytra; on each side of the thorax at base is an impression in which the punctuation is coarse, and close.

Single specimens have occurred in several parts of the North of agland, and South of Scotland, to different Entomologists; Mr. Bold, r. Crotch, Mr. Lennon, and myself. It was distinguished from rugineus some years ago by Mr. Rye, to whom a specimen taken

82 (September 1997)

by the late Mr. Ashworth in North Wales was sent, amongst of insects, for names, by Mr. Edleston; and Dr. Power has proposed fit the name of Ashworthi, in case of its proving an undescribed species. There is, I think, no doubt it is the H. obsoletus of Aubé. Its occurrent in this country is remarkable and unexpected; for it is a native Syria, and Southern (more especially South-eastern.) Europe. The geographical distribution in Europe, however, of several species Hydroporus is most eccentric. Thus, H. 5-lineatus has been found on in Lapland and on the borders of England and Scotland, and it wanthopus, Steph., only in Southern Europe and Britain, and yet I has taken these two species near Dumfries on the same day, and in the same pond.

#### H. NIGRITA.

Under this name we have mixed in our collections two species the synonymy of which is very complicated. In my reference given below, I have omitted to quote the earlier authors, as t descriptions of Fabricius, and even of Gyllenhal, are altogether u certain; with respect to the latter author it is however necessary remark that, in the 9th vol. of Sk. Col, Thomson has reversed to interpretations generally given to Gyllenhal's descriptions of H. pube cens and nigrita, because Gyllenhal says that pubescens is shorter ar broader than nigrita. In direct opposition to this change is, however the colour given by Gyllenhal; for he says of pubescens that the elytr are testaceous, a term which might be correctly applied (at least t some of its vars.) to the species generally called H. pubescens, Gyll but which is totally inapplicable to the species which Thomson no proposes to so designate. Nevertheless, Thomson's remark is in itse perfectly correct, and it must be understood that the assignment of th description of H. pubescens, Gyll., to the insect we know by that name is conventional, and traditional, rather than evident from the descrip tion itself.

The two species we have mixed as H. nigrita are-

- 1. A black Hydroporus very like H. pubescens, Gyll., but shorter, darker i colour, and with rather denser punctuation: this species is clothed above with distinct pubescence, the removal of which leaves the upper surface of the insec shining. The synonymy appears to be,—H. discretus, Fair., Ann. Fr., 1859, p. 28 Sch., Ins. Deutsch., i, 2nd pt., p. 64; H. nigrita, Sturm. Ins. Deutsch., ix. 56 Th., Sk. Col., ii, 24; H. pubescens, Th., Sk. Col., ix, 79.
- A black Hydroporus in which the punctuation and pubescence is very much more sparing than in the preceding species, and whose upper surface is dull, owing

ng finely and densely coriaceous between the punctures. This species I to be,-H. nigrita, Fab., Aubé, Icon. and Spec. gen.; Er. Käf. Mark.; B. Deutsch.; Wat. Cat.; H. glabellus, Th., Sk. Col., ix, 80.

e descriptions above alluded to present considerable discrepanpecially as to the punctuation of the disc of the thorax; this nnot be described correctly as altogether impunctate, but the res are very sparing, as is especially to be noted when the is compared with H. discretus. I have examined a specimen of bellus, Th., sent by Herr Thomson to Mr. Crotch, and find it to with our common British species.

#### LANARIUS.

s this species and its ally H. celatus have given me some trouble, we have apparently a third closely allied species, I give some ptions for the assistance of others.

celatus, dark. Black or pitchy-black, with the antennæ, legs, and palpi red. ad is broad, pitchy-red, finely and rather sparingly punctured. The thorax owed towards the front, its margins are reddish, it is distincly punctured hout, but the punctures on the disc are very much finer than at the base and Viewed sideways, the angle formed by the junction of the thorax and elytra inct but extremely obtuse. The elytra are a little rounded at the sides, hat pointed behind, moderately closely and finely punctured, and down me are distinctly to be seen the rudiments of two lines of another sort of res.

This species, compared with H. memnonius, is smaller, and less ng, but the angle formed by the junction of the thorax and elytra at about the same as in that species. It is in some respects allied e species I have above alluded to as H. nigrita; but, independently her characters, it may be distinguished from that species, as well om all others resembling it, by its short, and at the apex very d, anterior tibiæ. Under a powerful glass, the elytra are seen to Long  $1\frac{1}{2}$ -line. ess an extremely fine and scanty pubescence.

Widely distributed in Britain, but scarce. Malvern, Snowdon, noch, Edinburgh, Cheviot, and the Metropolitan district. A duller ety was found by Mr. Crotch and myself on Mamsoul.

H. melanarius, Sturm. Black, or pitchy-black, antennæ and legs red, head margins of thorax, more or less pitchy-red. The head finely and sparingly stured. The middle parts of the thorax are impunctate (or very finely and ingly punctured), but towards its posterior angles it is closely and densely stured. Viewed sideways, the thorax is seen to continue the outline with the ra, with but little interruption. The elytra are rather coarsely and somewhat ingly, evenly, punctured. The upper surface as nearly as possible destitute of escence. The elytra without, or with only indistinct traces of, two lines of Long 11-12-lin. r punctures.

The only specimens I possess of this fine species were found. Dr. Power in Surrey.

#### H. MONTICOLA, n. s.

Sub-ovalis, lateribus parallelis, sub-depressus, niger, marqinibus pminusve rufescentibus, antennis pedibusque rufis; haud nitidus, pusubtiliter punctulatus, elytris vix pubescentibus. Long  $1\frac{1}{3}-1\frac{1}{2}-1$ in

This insect is very closely allied to *H. melanarius*, but is an narrower, and more depressed, with the elytra much duller, m sparingly and finely punctured, and not quite so destitute of put cence. The outline of the elytra is continued by the thorax alm without interruption. The elytra have only indistinct traces two lines of other punctures. The greater dullness of the upper sface arises from its being more finely and more densely coriace. The female is rather duller than the male.

Found only on the mountains and exposed moors of Scotland Wales, Snowdon, Mamsoul, Rannoch, Thornhill

Intermediate between H. monticola and H. melanocephalus,  $\delta$  the following:—

#### H. PARALLELUS, n. s.

Oblongo-ovalis, angustus, parallelus, vix nitidus, niger, antennis e gatis, piceo-rufis, pedibus rufis; thoracis disco impunctato, elytris crebre, satque evidenter punctatis, pubescentia fere nulla, utrinque li punctorum majorum duabus.

Long. fere l<sup>2</sup><sub>3</sub>-lin

Antennæ rather long, the two or three basal joints reddish, the others mor less pitchy. Head pitchy-black, almost impunctate. The thorax black, with extreme sides reddish, the sides but little narrowed towards the front, coriace the middle parts impunctate, the punctures towards the sides not fine, but deep. The angle formed by the junction of the thorax and elytra about as in melanocephalus. The elytra are narrow and elongate, almost without pubesce distinctly, moderately closely punctured, the punctures at margins and apex distinct; each of them with two longitudinal rows of points; the anterior four reddish, the posterior pitchy-red.

A single specimen found by me at Rannoch, in Perthshire.

Distinct from the preceding by its narrower and more elong form, longer and darker antennæ, as well as by the punctured lines the elytra and other characters. Somewhat resembling in form a colour *H. melanocephalus*, 3, but more parallel, less distinctly putured, with the thorax strongly margined, &c.

# H. INCOGNITUS, n. s.

Ovalis, niger, thorace elytrisque fuscis, antennarum basi, cap

lateribus pedibusque, rufis; clytris punctatis, parce pilosis, macula linea laterali punctoque apicali pallidis.

ed to H. palustris, but larger, especially broader, with the pale markings eloped and not so distinct from the ground colour; moreover, the whole ifferent form, and in this respect approaches H. erythrocephalus. Antennæ h-red at the base, the external joints more or less marked with pitchy. pitchy with the sides paler, somewhat shining, scarcely pubescent, the sides y narrowed from the anterior to the posterior angles, the base, especially the sides, closely and distinctly punctured, the disc more finely and y. The elytra are of an obscure brownish colour with a blotch on each the scutellum pale, the lateral margins are yellowish at the shoulders, but this, dark, near the sides a little beyond the middle is to be seen a pale line, and just before the apex is another indistinct pale mark. The punctuthe elytra is rather more distinct than in H. palustris, the pubescence finer and more sparing. The legs are reddish-yellow.

have found this species in several parts of Scotland, and also Cambridge, and it has also been found and distinguished as a new

s by Mr. Rye.

his species is undoubtedly closely allied to H. palustris, but g a fine series of varieties of that variable species, I find nothing meet the two. It may perhaps prove to be H. vagepictus, Fair., cannot reconcile it satisfactorily with the description of that

DBS.—It may not be out of place to remark here that I agree the opinion expressed by the late Dr. Schaum as to H. tinctus, , and H. derelictus, Clark, viz., that they are respectively varieties . palustris and H. erythrocephalus.

H. UNISTRIATUS, Schrank. This little species has before been in British lists, but has been removed as having been incorrectly duced. It must, however, be restored, as Mr. Crotch has recently n a pair in Norfolk.

BUS TARSATUS, Zett.

melanarius, Aubé.

This fine and distinct species is to be placed near striolatus and narius, the upper surface being covered with fine irregularly tomosing striæ. It is not likely to be confounded with any of species. About the size and colour of A. guttatus, rather broader ever, and with an obscure paler dash at the side of each elytron the apex.

A single specimen is in Dr. Power's collection, taken, I believe, by Syme in the Orkneys. The species is widely distributed over

ope, but is everywhere scarce.

Thornhill, Dumfries, July, 1869.

DESCRIPTION OF A NEW SPECIES OF EPITOLA (LYCENIDA).

BY W. C. HEWITSON, F.L.S.

# EPITOLA TERESA, n. sp.

Upper-side (3): Brilliant ultramarine blue. Anterior with the costal margin and apex broadly dark brown, and a large of rufous-brown (bordered above with blue) at the end of the Posterior wings with the apex dark brown.

Under-side: Anterior wings from the base to beyond the mi dark brown, marked between the discoidal nervures by some in tions of blue; crossed beyond this by a band of six white spots: base of the costal margins and apex rufous. Posterior wings ruf with the base orange, marked, as in Acræa, by several round b spots: crossed by a band of white, which commences on the comargin below its middle, and, crossing the third median nervule, a parallel to the second nervule to the outer margin, forming an obstriangle; the nervules and lines between them dark brown.

Alar. exp. 2 inches. In my own collection. Hab. Africa (Cameroo

This species is especially interesting, as the imitator in its far (Lycanidae) of the great African group of the Acraidae.

Oatlands, Weybridge, August, 1869.

[The species of *Leptolis* described by me at page 68 of the prevolume was misprinted *Desine*: it should have been *Deione*.—W. C.

Occurrence in Britain of Lepyrus binotatus, a genus and species new to lists.—A single specimen of a Rhynchophorous beetle, which has been identified Messrs. Smith and C. O. Waterhouse of the British Museum as Lepyrus binota was taken in June last by a friend of mine at Minley, in Hampshire. It was foon a dusty road, the adjoining plants being silvery birch and broom.—F. ALE BLACK, Greenhill, Harrow, July, 1869.

Occurrence of Mordellistena brevicauda, Boh., in Britain.—On examining cer Mordellidæ taken in June last by me at Folkestone, I find that the insect I primo visû considered to be Mordellistena pumila is apparently M. brevicat Bohem.; in fact, I can detect only a single specimen of the common pumila on a considerable number of specimens. M. brevicauda, compared with M. pum appears to be larger, especially broader and not so shining; its thorax is not long, with the base less strongly sinuate on each side and the hinder-angles rat obtuse and not acutely produced, and its pygidium is not very much longer the apex of the abdomen, whereas in pumila it is very conspicuously attenua

ongated. Thomson (Sk. Col., vi, 297), besides these characters, states umila has 3 strize on the tibize and first joints of the tarsi of the posterior chilst brevicauda has 4 strize on the same relative members. These strize liquely from the upper ridge and cross the outer side of the tibize and tarsi, a not very easy of definition in all lights; on careful examination, indeed, in a positions, more than the specified number can be seen in each case,—but I at in the insect I suppose to be brevicauda there are more than in pumila, we should be.—E. C. Rye, 7, Park Field, Putney, S.W.

apture in Britain of Hydroporus discretus.—At the joint excursion of the ekshire Naturalists' Club and the Dumfries and Galloway Natural History ntiquarian Society to Newcastleton, in Roxburghshire, on the 29th of July I took Hydroporus discretus, Fairm. Dr. Sharp informs me that it agrees the specimens already captured by him, and brought forward among other dephaga in an earlier part of the present number.—W. R. McNab, Southern ies Asylum, Dumfries, August 1869.

Note on new British species of Anthonomus.—In the 2nd part of M. J. Desbrochers oges' Monograph of the European Balaninida and Anthonomida (Ann. de la Ent. de France, 1868, p. 411 et seq.) are descriptions of certain species string to English Coleopterists, and to which I will now briefly call attention. Anthonomus pubescens, Payk., Gyll. No reference is made to Britain as a ty for this species, which appears in Waterhouse's Catalogue with a query; there seems to be no doubt that the insect taken at Rannoch by the late les Turner, and represented by Mr. Waterhouse's queried species, is pubescens,

Anthonomus britannus, des L., l.c., 429. This species, attributed solely to and, appears to have been described from an insect communicated by Mr. ch, under the name of pubescens, Walton. M. des Loges remarks, however, it has only very slight resemblance to pubescens, Payk., being more like naws, sibi; and that the shortness of its rostrum (which is almost dull), its stuation, the form of its striæ and its feeble femoral teeth easily distinguish it its allies. The insect is shortest-ovate, convex, almost glabrous, entirely ish-ferruginous, and smaller than any of our species. An English description will be found in the late Mr. Walton's Notes on Curculionidæ (Ann. and Mag. lat. Hist., 1844); from which it appears that three specimens of it were taken lerefordshire by Mr. Doubleday.

Anthonomus Chevrolati, l.c., 430. This is described from specimens from iers, Lyons, the Fyrenees, England, and elsewhere. Its short convex form, shape of its thorax (described as very transverse, slightly narrowed at the e and very much so at the apex, with the sides conspicuously rounded before middle), the curving of the anterior fascia of its elytra towards the scutellum, its smooth interstices, are stated to distinguish it easily from all other species embling it in color, none of which, however, are specifically compared with it M. des Loges.

Anthonomus ulmi and pedicularius. M. des Loges is anticipated by 24 years

in his remarks on the Schönherrian confusion as to these species, and in his re of examination of Linuaean type of *pedicularius*, by Mr. Walton's Notes (p. above alluded to.

Anthonomus rufus, Schön.; des L., l.c., 436. This species, found in the grapart of Europe (England being specified), is stated to be often confounded ulmi and pedicularius in collections, but to be easily distinguishable by its cylindrical and smooth rostrum.

Anthonomus conspersus, (Rey) l.c., 445. Occurs in England, amongst c localities, and appears to be closely allied to pedicularius, from which it is st to differ in being always smaller, of a very dark tone, and narrower and i parallel form. Numerous other minute differences will be found in M. des Id Monograph.

Anthonomus incurvus, Panz., des L., l.c., 451. Also referred to Englamongst other localities. It appears to be very closely allied to pomorum (especthe var. of the latter, in which the fascia of the elytra is not well defined), but t shorter than that species, more obtuse behind, less parallel, more convex and rabruptly sloped behind; its rostrum is less elongate, its legs lighter and I slender, and its posterior and middle femora have the notches and teeth I pronounced.

This species did not escape Mr. Walton's observations. He notes its p liarities and the general opinion as to its not being specifically distinct from pomorum; also that it occurs in Sweden on Prunus padus (Bird cherry), and m be expected to be found here on that plant.

Anthonomus sp—? I see no particular reference to any species or variatisfactorily agreeing with the very small Anthonomus allied to rubi, but a lurid elytra, taken by Dr. Sharp and myself in damp parts of small glens 1 Camachgouran, Perthshire, and afterwards found to inhabit Comarum palu. This insect has been supposed to be brunnipennis, Curtis (obscurus, Steph.), wh according to Walton, is nothing but an immature var. of rubi. He does not, hever, specify any peculiarity of small size for that var., merely stating in a gen way, that rubi varies greatly. The smallest of my Scotch specimens is, with the rostrum, under an English line in length; and there is not the least do that all of them are quite mature.—E. C. Rye, 7, Park Field, Putney, S. August, 1869.

Note on Psylliodes nigricollis.—Herr von Rottenberg, Berlin, Ent. Zeit., 18 p. 411, records the capture of this insect, often in company with P. chrysocephe and notes his inability to perceive any points of separation between them exc the colour of the elytra; remarking, moreover, that specimens of nigricollis oc in which the thorax is brownish; so that even the color test is not constant. I glad to find so entire a corroboration of my recorded views on this point.—ID.

Note on Bledius fuscipes, Rye.—Dr. Kraatz, Berl. Ent. Zeit., 1868, p. 2 records two specimens taken by the late Herr Pfeil at Stettin, agreeing with exaples of B. fuscipes from Edinburgh. He gives superficial characters to distinguit from B. subterraneus and pallipes, and considers it a good species. Curiou

where the hard is the contract of the contract

bitinus in bees-nests.—I am able to corroborate Herr Eichhoff's observations ababits of Leptinus testaceus, quoted at p. 139 of the 3rd vol. of this magaOn 29th June last, having found a nest of Bombus pratorum at Needwood, 
Rishire, the entrance of which I was searching, in the hope of seeing 
tophagus, or other parasites, to my surprise, I saw Leptinus, and was soon 
atod with its extreme activity in my endeavours to secure it. The following 
betained a second specimen, while a third retreated into the hole. A lad, 
I had set on the look-out, brought me one more, and two from a nest of the 
le-bee a mile from the first locality.

In the 5th of July, being about to leave home, I dug out the nest first above coned. It was in a cavity about a foot deep, and perhaps nine inches in ter; and in the rubbish collected by the bees surrounding the cells were found on 40 and 50 of this strange little rarity. In the midst of the cells themselves two Antherophagus pallens, together with some Cryptophagi. I may remark a nest of B. hortorum, which was a few yards from the other, did not appear than Leptinus; this nest, however, was not disturbed.—Henry S. Gorham, wood, July, 1869.

1 new locality for Astinomus wdilis.—Mr. John Young, of the Hunterian um, showed me a fine live 3 of the above Longicorn to-day, which he had eccived from a surgeon at Coatbridge, with the following words written in the "Found embedded in a seam of coal in No. 9, Rosehall pit, 147 fathoms from

urface."

I suppose it had emerged from some of the timber used in the mine, as I do now of any wood near Coatbridge in which this insect is likely to occur.—

CHAPMAN, Glasgow, August 13th, 1869.

Henestaris laticeps, Curt.—I have just taken this species here among Thrift tice armeria). The locality is not now, as Mr. Rye once took many specimens, but I am not aware that the insect has been identified with the plant. This ink I have now done, for not only can I not find the image away from the ft, but I find the larve and pupe in it.—J. W. Douglas, Seaford, 7th August, 1869.

Discovery of the larva of Sesia ichneumoniformis.—During three weeks' stay in Islo of Wight, I was fortunate enough to secure a fine series of this local species, or which I set to work to discover, if possible, its pupa, by splitting open stems I grubbing up roots of all plants, in the neighbourhood in which my captures so made, that were capable of containing such a larva, but without success.

Finding myself thus foiled, I watched the females in the hope of detecting on in the act of ovipositing, but in this, again, I failed, for their colours being conspicuous they were soon lost to sight.

The third chance was to search for the ova (with the appearance of which I salready acquainted, thanks to my fair captives), and a few hours' search re-

sulted in my finding an egg deposited on the narrow leaved plantain; in this ce there was, however, no trace of any larva having fed; and its occurrence on a plant must have been accidental, for I afterwards found several eggs on the mediae of the leaves of Lotus corniculatus and also larva and pupes in the roots of same. I have forwarded the larva to Mr. Buckler to figure and he will see description of it to the Magazine.—E. G. Meek, 4, Old Ford Road, E., July 30th

Note on the earlier stages of Sesia ichneumoniformis.—The larva of species has, until recently, baffled the researches of entomologists, both Britishs foreign; and has been reserved for the indefatigable Mr. Meek to make known us. This is the second clear-wing larva he has discovered.

On July 26th, 1869, Mr. Meek sent me a larva of S. ichneumoniformis, subsequently a pupa, with the mines of both in the main roots of Lotus cornicula

Its habit is to scoop out a grove or hollow channel along the side of root, covering its back evenly with the gnawings or  $d\ell bris$  of frass, spun gether with silk, not projecting as an excrescence, but with the outline of the preserved; it is however, if present, readily seen where sought for, as the exter covering of its mine is of a pale brownish-yellow saw-dust tint and texture, in sta contrast to the dark grey-brown colour of the rind of the root.

The larva is about half-an-inch long, rather thick in proportion to its leng the head is less flattened than usual in this genus, and the body rounded, plu and full; the second segment is the longest, and the third and fourth are rat thicker than the others, with puffed or swollen sub-divisions; the rest of the sments have rather an over-lapping tendency, and the three hinder ones tagradually.

The head is pale brownish flesh colour, with three broad stripes of brown deeach lobe, and a triangular brown patch between them; the mouth is black brown.

The second segment has a semi-transparent polished plate of flesh cold through which can be faintly seen the back parts of the head slightly tinged w brown.

All the other segments are of an uniform pale yellowish flesh colour, rat opaque, with a slight trace, here and there visible, of a darker dorsal vessel.

The tubercles are not raised, but the situation of each of them is indicated a very fine pale brown hair. The spiracles are flesh-coloured, outlined with brown the pro-legs same as the body; the anterior legs pale brown.

The pupa is about three-eighths of an inch long and rather flattened beneat arched upwards rather suddenly from the sharp beaked point at the head, a rounded on the back. The abdomen at its junction with the thorax is depres at the sides, widens gradually for about half its length, and from thence tap towards the anal extremity, which is rather truncated. The abdominal rings he a series of minute covered hooks at their edges. The wing and antennæ cases remarkably long, extending nearly to the end of the abdomen. The eyes appularge and projecting and are black, all the other parts being of a shining brown.—WM. BUCKLER, Emsworth, 12th August, 1869.

Note on period of appearance of larva of Polia nigrocincta.—Mr. Gregson 1 certainly made a mistake in his accounts of the larva of this species, when he sta

be eggs hatch in the autumn. Having reared broods of *P. flavocincta* several he eggs of which always hatched in April, I thought it very improbable beggs of such a closely allied species as *nigrocincta* should hatch in Septemtherefore wrote to Mr. Stainton, asking him to refer to Freyer's account of a of this species and he most kindly sent me a translation of it, from which are that the eggs hatch in April like those of all the other species of *Polia*. confirmed by my friend M. Millière.

eyer found the larvæ rather difficult to rear, many of them dying when full--HENEY DOUBLEDAY, Epping, August 14th, 1869.

ote on eggs of Lycana Arion.—I think Mr. Dembski has mistaken the eggs of other insect for those of L. Arion: he says they are oblong and either white low like those of Anthocaris cardamines. The eggs of the Lycanida are and very closely resemble those of the Notodontida. I have never seen the of L. Arion, but my friend Mr. Buckler informs me that they are round, rather led on the top and pale blue, the colour of a hedge-sparrow's egg. I believe two of all the single-brooded species of Lycana hybernate, and feed in the still the end of May, when they assume the pupa state.—ID.

Note on eggs of Lycana Arion.—On the 15th June, 1869, I had the great pleasure seive from Mr. Herbert Marsden, a 3 and 2 Lycana Arion, alive, captured by together, and accompanied by two small plants of Thymus serpyllum in

These plants were potted separately, and the insects put on one of them under ss cylinder. During a gleam of sunshine, the  $\circ$  certainly appeared to me to sit an egg amongst the flowers, but the weather being cold and cloudy, I red further observation till the following day, when I again saw her deposit gg, as before.

After dark I removed the butterflies to the second plant in order that I might sly inspect the first on which they had been for two days; nor was I dispired, for, on the morning of the 17th, on looking over the blossoms with a ng lens, I detected six eggs, all laid on the calyces between the heads of flowers, not one on either stalk, stem, or leaf.

The egg of Arion is round, smooth, and depressed on the top; pale greenish-

a in colour.

Although the eggs hatched both with Mr. Merrin and myself, yet we have
all to detect the young larvæ on the plants at present; but we believe they must
wery small, hiding away somewhere, and that they will most likely hybernate.

I have wished to state what I have noted so far, hoping to resume my obsertions of this very interesting species on a future occasion.—WM. Buckler, asworth, August 13th, 1869.

Notes on Solenobia pomona and Xysmatodoma melanella.—It is now some ten twelve years since I met with a large number of cases, which apparently longed to a species of Solenobia, on fruit and other trees in this neighbourhood. hen I first discovered the cases, I supposed them to be inconspicuella, which I new occurred round Bristol; but, upon comparing cases of my insect with cases of 92 [Septem)

inconspicuella, I found a decided difference in form; the cases of inconspicuella; I think invariably three-sided, straight, and grey in colour, while those I took we round, slightly curved, and generally green.

When I first discovered them, I forwarded a supply to Mr. Stainton, vi, however, thought they would prove Dipterous, and informed me that he is once found a case of apparently the same species on a plum tree.

Towards the end of June, however, moths began to appear (all apterous females something like, but easily separable from, females of inconspicuella, being myellower in colour, and with the ovipositor very much longer.

I continued every season to breed the insect in large numbers with the ho of discovering the male, but nothing appeared but females; these would lay g in great abundance, and the glass cylinders in which I kept them would be so swarming with the young larvae.

I sent liberal supplies of cases to Mr. Doubleday, Mr. Stainton, Mr. Edleste and other of our leading entomologists, with the same result I believe in era case, viz., nothing but females appearing.

The late Mr. Weaver appears to have met with this or a similar species North Wales, as he says in a communication to the Zoologist of 1856, "Le summer, when collecting in North Wales, I found several small cases on the rea at Conway that were entirely new to me; they were covered with the lichen up which the larva were feeding, the cases were round, and a little curved. The when bred, produced all females, bearing a very close resemblance to inconspicuelle.

It is, I believe, now generally understood among entomologists that there no doubt that the economy of the genus Solenobia and others resembles in some asure that of Aphis, viz., a series of generations without sexual intercourse, if great point of difference being that the Aphides, being viviparous, produce the young at once; while with the Solenobia, eggs are laid, and the usual course of lan pupa, and imago appears.

It has often puzzled me as to how the different species of *Solenobia* become distributed; only this day I discovered a case on a small tree not thicker the my wrist, and I know of several young trees growing quite detached from other upon which the cases abound.

I do not believe that the larva ever travels many inches from the spot up which the eggs are laid, and the females appear quite incapable of locomotion.

Altogether the species has been a problem to me ever since I began to to some interest in it, but I am glad to say I have at last in some measure be enabled to understand a little more of its habits and economy than I used to do.

On some pear trees here I have always been able to get a supply of carwhen wanted; and, upon an examination of these trees the other day by myself a my friend Mr. A. E. Hudd, we discovered that a large number of the cases we empty, the moths having emerged. A search for the image was rewarded by the discovery of a couple of little moths we did not recognise, and therefore hop would prove male Solenobia pomona; we, however, much to our chagrin, failed capture either.

Next morning I renewed the search, and captured six fine specimens. I the collected a lot of the cases in a glass, and soon had the satisfaction of seeing a me emerge. Altogether, I have bred about two dozen specimens, eight of which a apterous females, but the rest all winged; but judge of my utter aston shment who

tting the specimens I had bred and captured, I found that about half my d males were females. Mr. Hudd has also bred all three forms.

on a close examination of my specimens, I was much struck by their resemto the description of Xysmatodoma melanella in Mr. Stainton's Manual, and arding specimens to Mr. Doubleday I drew his attention to the resemblance, I did not previously possess examples of melanella, I could not say positively pecimens would be found to differ when placed side by side.

a communication since received from Mr. Doubleday I find that my surmise correct one, and that S. pomona, Stainton, and X. mclanella, Haworth, are me, so that I presume Mr. Stainton's name will have to drop, at least as far name is concerned.

will be interesting to observe in the future whether we shall at once lose inged form or whether we shall reach the state of all wingless females by as; I incline to the latter opinion, as a few years hence we could be able to retain of rearing a considerable per-centage of winged forms of the other is, inconspicuella, but of late years only apterous females appear. May we not that with this species also a brood of winged males and females will appear, y have not already done so?

do not possess a single winged example of inconspicuella; but perhaps genulopossessing winged specimens will carefully examine them, in order to find, if ble, winged female forms of that insect as well as of melanella.— Geo. Harding, Stapleton, Bristol, July 13th, 1869.

[The above communication appeared to us so extraordinary, that, before putting type, we communicated with the writer, who says in reply that the cases from h he has bred both forms occur on some pear trees within ten yards of his is; and adds, "Strange as my communication might appear to you, I am still pinion that my deduction is correct; at any rate it is sent in good faith, and an honest desire to clucidate the truth on the subject."—EDS.]

Procris globularia, §c., at Folkestone.—I have found this tolerably abundant in particular spot near Folkestone, from which place I think it has not yet been orded. On the sunny slope of a hill rising from one of the numerous hollows the neighbourhood, it was possible to take any number of them; though, from nature of my engagements, I could never get to the spot till about six in the ning, and was then obliged to be content to take whatever specimens lingered ut in the last rays of the sun. Flying with it, there was also a plentiful supply statices, and a few, if I am not greatly mistaken, of Geryon; but of this latter eies I will not be certain until I have shown it to a better authority than myself, aught the first specimen on the 25th of June, and at the present date they are il about. This is later than they are usually said to appear; but this must be ributed to the season, which is certainly adverse to entomologists.

T. chrysidiforms was a long time putting in an appearance, and has only been to during the past ten days, and that very sparingly, one specimen in a couple of urs being my reward in the same spot, where, last year, in the middle of June, could take ten or a dozen in the same time. T. Bondii has come out during the list week or so, but, I fancy, is not so abundant as formerly.—Henry Ullyfit, olkestone, July 6th, 1869.

Case made of short materials,

placed crosswise, or irregularly.

Case made of long materials

placed invariably

lengthwise.

[Since I sent the above note my specimens of *P. Geryon* have been verified by Dr. Knaggs. I forgot also to state that *Nemcophila plantaginis* has turned up by I caught several specimens in a wood in June.—H. U., 13th August, 1869.]

Captures at Folkestone.—Two days collecting at Folkestone, at the beginner of this month, resulted in my having captured the following:—In the Warren-obtained Sesia chrysidiformis, S. ingratella, a probably new Ephippiphora, and if full fed larva of S. euphorbiana; and, along the Sandgate Road, T. Bondii, D. flaw dorsana, C. conterminana, and C. citrana. L. Adonis swarmed everywhere on the chalk, and S. irrorella was sufficiently common in the Warren. Mr. Ullyett is discovered a locality there for P. globularia and Geryon, which both he and M. Purday have taken. Mr. Purday kindly took me to the spot, and I had the pleasure of seeing both species alive for the first time.—HOWARD VAUGHAN, 12th July, 186

Sesia chrysidiformis bred.—This species made its first appearance in my breedin cages yesterday, from larvæ I found at Folkestone last autumn. They are a remarkably large specimens.—In.

Notes on some of the British species of Psychida.—I have lately bred about dozen specimens,  $\mathcal{Z}$   $\mathbb{Q}$ , of Psyche anicanella, Bruand. It feeds on the gree lichen on buckthorn stems at Hampstead. Some years since Mr. Tompkins fom a larva, or rather a case, and bred from it what I believe was understood to salicicolella of Bruand. I have hunted for this species ever since without success till last year, when I first bred a  $\mathcal{Z}$ , and then a  $\mathbb{Q}$ , which latter at once overthrow the salicicolella theory, as Bruand's species of that name has the anal tuft of the female brown, whereas this was white.\* These two species—salicicolella an anicanella—are very distinct, and different from all others save P-fusca, their case being made with the materials placed crosswise, and no lengthy straws or gras are used. I send a list of the different species of these very interesting littlensects that I possess, either as imagos or case. I have most of the females i alcohol.

- 1. fusca
- 2. salicicolella?
- 3. anicanella
- 4. nullella
- sp.? Larger than the last; taken in July.
- 6. intermediella
- 7. crassiorella
- 8. roboricolella
- sp.? Near the last, but with the wings much more rounded.
- 10 & 11. Cases only; undetermined.

ROBERT MITFORD, Hampstead, July 22nd, 1869.

[In Staudinger & Wocke's Catalogue, anicanella, printed in error anicalella is given as a synonym of betulina, Zeller (1839) in the genus Epichnopteryx.—Eps.]

<sup>\*</sup> Bruand says of anicanella, "the anal tuft of the female is snowy-white."-EDS.

pinostola elymi at Cleethorpes.—Having a few days to spare in July last, ing very anxious to take T. elymi, I wandered to Cleethorpes (a distance of nan a hundred miles); and, although the weather was not very favourable, the pleasure of turning up that rare insect. I commenced beating on the colls, but what few I got by this method were very poor ones; I sugared with ness; noither could I take any flying at dusk as they appear to be very little wing. What good specimens I captured were found with a lantern, at rest sand-reed, Elymus arenarius, a plant upon which the larva feeds, and which of our Botanists tell us none of our domestic animals will eat.

have also turned up during the same month, O. suspecta, A. valligera and D. conspersa, H. dentina and glauca, M. arcuosa, and a very striking female y of S. lubricipeda.—John Thorpe, Church Street, Middleton, near Manchesugust, 1869.

Saptures of Lepidoptera at Witherslack.—On the 4th and 13th to 15th of this I captured the following species; those marked thus \* are new to the ct.—L. mesomella 3, L. complanula 6, E. porata 1\*, Acid. inornata 4, L. ata 2, E. alchemillata 6, Eup. pulchellata 1, E. constrictata 12, E. pumilata 12, dulata 2, C. fluctuosa 1, M. arcuosa 2, H. contigua 1, Botys terrealis 1, S. alis 2, E. cingulalis 2, E. 8-maculalis 6, Eud. truncicolella 16, C. falsellus 6, netellus 1\*, H. eluviella 1, E. semiruja 1, R. marmorella 40, P. piceana 1, P. ngana 1, P. carbonana 1, Sericoris sp.? (like bifasciana) 1, E. rufana 20, O. uana 6, C. perterana 2, A. biarcuana 2, A. subarcuana 1, A. siculana 6, E. tana 1, S. puncticostana 1\*, D. consortana 20, D. n. sp.? 8, C. juliana, 1\*, oppoliana 6, Argyrolep. cnicana 1, A.—fine new species 4, P. roboricolella 6, a bistrigella 12, Dep. carduella, several larvæ, Gelechia cinerella 3, G. ligulella . dodecella 20, G. senectella 20, Par. lappella 2, Tinag. resplendellum 2, Ornix cella 2, Coleoph. Fabriciella 6, C. pyrrhulipennella 6, Elach. Gleichenella 8, ppl. parvidactylus 2, P. osteodactylus 12, P. plagiodactylus 12, P. tephradactylus J. B. Hodgkinson, Preston, 15th July, 1869.

Unnatural union.—On 15th July last, I found Satyrus Janira, &, in copull a Vanessa urtice, \( \rangle \). The eggs of the latter, on dissection, were distinct, and ble, but small and not well developed.—T. Algebron Chapman, Abergavenny, ust, 1869.

Remarkable variety of Argynnis Selene.—An extraordinary var. of this species captured by a friend of mine, Mr. H. Reynolds, at Leith Hill, Surrey, during month of July. The wings on the upper-side are nearly all black, but there is pot of the usual ground colour (about the size of a pea) in the centre of the d-wings.—E. G. Meek, 4, Old Ford Road, E.

Curious habit in a Noctua-larva.—Yesterday, when examining a stunted willow this neighbourhood, for galls, I was a little surprised to find a larva of one of the ctuidæ greedily imbibing the frothy liquid, by which the young larva of an Aphroca or a Ptyelus is wont to protect itself.—Albert Müller, May 24th, 1869.

Cossus ligniperda at sugar.—At Vol. i, p. 264, of the E. M. M., Mr. Barrott entions the fact of Cossus ligniperda settling upon a sugared tree. I do not ink that this can be a common occurrence, and like Mr. Barrett, I am unable to aggest the cause which prompted the visit. However, on the 9th of this month

96 September, 16

while examining my trees, I captured a fine male of this species, settled on a sugar, and apparently busily engaged with it.—R. P. MURRAY, Plymstack, Plymon July 13th, 1868.

[Similar instances have been recorded in the "Intelligencer," and elsewhere The Lithosidæ, another family with poorly developed haustellum, are also we known to frequent "sugared" trees.—EDS.]

Ourious occurrence of the Wood-Leopard.—A fortnight ago twolve Zenzera asc came down my drawing-room chimney. They were all males. What business the had there, I cannot say. I looked in vain for a female.—W. C. Hewitson, Oatland Weybridge, August, 1869.

New Rhopalocera from South America.—Mr. Buckley, who went out to Son America for me, a little more than a year ago, has returned to England, after most successful journey. He crossed the Andes from Guayaquil to Canelos; a though very much hindered by almost constant rain, has brought home whim a very fine collection, containing, as he promised it should, 5000 butterfiin most beautiful condition, and abounding in new and rare species. I hanot yet had time to examine the whole (they are in papers), but have be delighted with the following things:—a new Agrias, 2 new species of Callithea, to or a dozen new species of Leptalis, a dozen and a half new species of Heliconia many new Erycinida, Batesia hypochlora, Siderone Archidona, Agrias Sardan plus, &c.—ID.

Sphingidæ in Japan.—In Japan, I have found two species of the genus Ia one blue, but otherwise similar to I. statices; the other smaller, and having t upper wings 5 spotted, as in Anthrocera. The latter appears in July, on clevat hills of 1200 feet; the former is common now, on hedge flowers. A Sesia has n been uncommon on warm days during the last fortnight, but I imagine the specimens have hybernated. On first emerging from the pupa, this species has dense scaled wings, which become transparent at the first flight; it is doubtless the sar in the British species.—G. Lewis, Nagasaki, 29th April, 1869.

Corrections in notes on Irish Lepidoptera.—In my notes on a visit to Ireland the last No. of this Magazine, the species mentioned as captured at Wicklow show properly be referred to Howth; "Dallymount" is erroneously printed for "Doll mount;" and "River Armanoe" should be "River Annamoe."—T. J. Carringro York, August, 1869.

#### Rebiew.

"Petites Nouvelles Entomologiques." 1869. Paris: E. Detrolle, fils.

Under this title it is proposed to publish, twice each month, a sheet
"Petites Nouvelles" respecting Entomologists and their doings; i.e., capture
rare species and exchange notices; movements of Entomologists; announcemen
of monographs in progress and books to appear; notices of collections to be sol
and general information. If it can be sustained, this will be of great service
those who wish to keep themselves an courant with all entomological news. The
numbers already published give a variety of useful notes, and those whom it me
concern will probably find it to their advantage to communicate intelligence
M. E. Deyrolle, Rue de la Monnaie, 19, Paris, for insertion in succeeding numbers

RIPTIONS OF NEW SPECIES OF LEPIDOPTERA RHOPALOCERA, FROM OLD CALABAR AND ECUADOR.

BY W. C. HEWITSON, F.L.S., &c.

#### EURYPHENE ELPINICE.

Jpper-side. Female, orange. Anterier wing with two outline in the cell (one minute) and one at the end of the cell. Apical black, marked by white spots; one large, irregular, trifid: a small clow this: a sub-marginal band of eight: the first two of which costal margin and the fourth are small, the fifth marked by a spot, the eighth large with the centre black. Posterior wing with ervures, an apical spot, a sub-marginal band of spots, and the in, brown.

Under-side, pale rufous-white. Anterior wing with the spots at the cell more distinct, the larger spot bifid: an outline spot and white spots below the cell: the apical half pale brown with the spots as above, the sub-marginal spots each marked by a spot of . Posterior wing with a bifid spot within the cell, an irregular of brown before the middle, one or two triangular spots at the angle, some indistinct spots on the costal margin, and a sub-marlinear band, which is bordered on both sides with white, brown.

Exp. 2 inch. Hab. Old Calabar.

In the collection of W. C. Hewitson.

#### MECHANITIS MAMERCUS.

Upper-side. Male, rufous-orange. Anterior wing crossed beyond middle by a broad band of yellow, sinuated on its inner border, ated on its outer border: the base of the costal and inner margins, ge triangular spot between them, four spots near the middle, the and a spot on the outer margin below the middle, dark brown. Posterior wing with the costal margin, and a large space which

rs half the wing, and is bounded by the inner margin, dark brown: outer margin black, narrow.

Exp.  $2\frac{?}{10}$  inch. Hab. Ecuador. In the collection of W. C. Hewitson.

Near to M. Mansuetus of Hewitson; very like M. Menophilus, but a different neuration.

#### ITHOMIA VARINA.

Upper-side. Male, semi-transparent, rufous-orange: the outer gius brown. Anterior wing unusually long. The base rufous,

marked by an oblong brown spot; crossed before the middle by a bropalmate band of pale yellow, marked by two brown spots, and dividinto six parts by the nervures; the apical half brown, with the nervur black; the inner margin black.

Under-side as above, except that there are two minute white sp. at the apex of each wing.

Exp. 2 sinch. Hab. Ecuador.

Neuration and colour of I. Tutia of Hewitson.

#### ERESIA NERIA.

Upper-side. Male, dark brown. Anterior wing with a large angular space of orange divided by the nervures; the nervure who closes the cell broad and black.

Under-side, rufous-brown, with the nervures and lines between black. Anterior wing with the basal spot as above. Poste wing irrorated with yellow: the base yellow, and marked by two spots.

Exp.  $1\frac{s}{10}$  inch. Hab. Ecuador.

In the collection of W. C. Hewitson.

Nearest to A. Acraina of Hewitson.

#### PRONOPHILA ALUSANA.

Upper-side, dark brown, the outer margins dentated. Ante wing crossed at the middle by a broad irregular band of orange. I terior wing crossed beyond the middle by a similar band of orange broken near the apex, where a portion of it forms a triangular spot

Under-side as above, except that the anterior wing is ochrenear the apex, which is crossed by a band of four minute white spethat the posterior wing is crossed before the middle by an angochreous band; that the apical spot (which is much larger) is unwith the band (which is slightly undulated with brown); and that space between the band and the outer margin is undulated vochreous-yellow, and has three triangular spots of lilac-white, emarked by a white spot, bordered with black.

Exp. 2 inches. Hab. Ecuador.

Nearly allied to P. Philotera of Hewitson.

#### PRONOPHILA TENA.

Upper-side. Female, dark rufous-brown. Anterior wing cros

ad the middle by a band of five white spots: two minute white near the apex. Posterior wing crossed beyond the middle by a of four minute white spots.

Under-side as above, except that the spots of the anterior wing naller.

Exp. 2 inches. Hab. Ecuador.

Unlike any other species, but nearest to P. Perita of Hewitson.

The males of this species have the white spots much smaller, and me specimens scarcely visible on either side.

This and the four preceding species are from the very rich collection in Buckley.

Oatlands, Weybridge: September, 1869.

SOME NEW AUSTRALIAN GENERA AND SPECIES OF CURCULIONIDÆ BELONGING TO THE OTIORHYNCHINÆ.

BY FRANCIS P. PASCOE, F.L.S., &c.

In Lacordaire's system, the Otiorhynchinæ form one of the subilies, or as they are there called "tribes," of that portion of the culionide in which the mentum occupies the whole area of the ath, and the sides of the prothorax behind the eyes are not produced what is called the ocular lobe. The Australian beetle-fauna conas a number of genera and species almost entirely unknown, or described, belonging to this sub-family, and those in my collection ing the corbels of the posterior tibiæ open, and the claws free,\* m the subject of the following notes. Some, in habit and colour, ulate species of Peritelus; others, belonging to the genus Myllocerus, ght be easily mistaken for Phyllobii. Few of these insects exceed r lines in length; the scape of the antennæ is very much curved in , and the elytra are always striate-punctate, with the interstices ttish, and often furnished with a row of more or less erect stoutish irs; the eyes are black, and contrast strongly with the pale coloration the scales with which these insects are covered. From their general pearance and the quiet coloration of most of them they are probably equently confounded together and are therefore neglected; probably at a tithe of them is known. I have found it necessary to divide ese insects into four genera, (exclusive of Myllocerus, Schön.), which ay be tubulated thus:-

<sup>\*</sup> The first of these characters excludes Isomerinthus, and the second Merimnetes, both general Australian species of very similar habit to those treated of in this paper.—F. P. P.

- 1. Prothorax nearly straight at the base.
  - A. Funicle of antennæ 6-jointed ......Phlyda, n. g.
  - B. Funicle of antennæ 7-jointed.
    - b. Scrobe extending to the eye ......EPHERINA, n. g.
    - b\*. Scrobe strictly limited behind.

Club of the antennæ pedunculate... TITINIA, n. g. Club sessile ......IDASPORA, n. g.

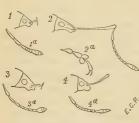
#### PHLYDA.

Rostrum shorter than, and nearly as broad as, the head; scrobes very short and distinctly limited behind, placed nearly at apex and visible from above. Eyes small, round. Scape of the ante curved, extending to the middle of the prothorax; funicle (fig. 6-jointed, 1-2-3-joints gradually shorter, obconic, the last three tr verse; club small, narrowly ovate, sessile. Prothorax cylindr Elytra obovate. Legs moderate; femora thickened in the mid unarmed; anterior tibiæ bisinuate on the inner edge, posterior their corbels open; tarsi with the third joint broadly bilobed; cl free. Metasternum rather short. First two abdominal segments la the first suture arched.

This genus will be readily distinguished by the six-jointed fun The species described below has exactly the habit of Perit Schönherri.\*

### Phlyda periteloides. (fig. 1.)

Closely covered with small round scales, of a whitish colour clou



- . funicle of antenna of ditto.
- 2. Epherina.
  2a. tarsus of ditto.
- Idaspora. funicle of antenna of ditto. funicle of antenna of ditto.

tolerably distinct brownish stri on the prothorax; elytra show ovate, with well marked striæ most obsoletely punctured, e apex rounded, and very feebly p duced; body beneath and legs w grevish, somewhat silvery scal the corbels of the tibiæ edged w black setiform scales.

with pale brown, and with th

Length, 21 lin

Hab. Adelaide.

<sup>\*</sup> This species, on account of its claws which are not united, should be separated from Perite See Lacord., vi. p. 184, note.—F. P. P.

#### TITINIA.

Rostrum very short, gradually narrower above, deep at the sides; es oblique, approximating, distinctly limited behind. Eyes nearly l. Scape of the antennæ nearly reaching to the base of the prox; funicle (fig. 4a) 7-jointed, the first joint longest the rest tally shorter; club elongate, pedunculate at the base. Prothorax drical. Elytra ovate. Metasternum moderately long. Legs and men as in Phlyda.

The head in this genus presents a remarkable profile, owing to the cal depth of the rostrum and the dorso-apical position of the scrobe.

To a very much worn specimen of a second species from Sydney.

#### Titinia ignara. (fig. 4.)\*

Narrowly ovate, closely covered with grey scales, very indistinctly ted with darker grey; head without any traces of lines or excavas, entirely scaly; antennæ extending to the middle of the elytra, k, clothed with sparse silvery hairs; prothorax a little longer than id, the sides slightly rounded; scutellum distinct, rather narrow; as with the interstices of the striæ broad, each with a row of sparse, semi-erect bristles; body beneath with sparsely set white scales, see on the legs greyish.

Length, 2 lines.

Hab. Melbourne.

ve.

#### IDASPORA.

Rostrum longer than the head, moderately stout; scrobes oblique, approximating above, distinctly limited behind. Eyes nearly round, pe of the antennæ not extending to the base of the prothorax; icle (fig. 3a) linear, 7-jointed, the first two joints longest, the rest-equal, club shortly ovate, sessile. Prothorax cylindrical, the base-lobed. Elytra narrowly ovate, a little broader than the prothorax he base, shoulders scarcely prominent. Metasternum short. Legs abdomen as in *Phlyda*.

The rostrum is longer than in either of the preceding, and the obes are lateral, the lower portion only of each being visible from

Idaspora terrea. (fig. 3.)

Narrowly ovate, blackish, clothed above and beneath with dull yish scales; head and rostrum slightly concave in front, the latter the four indistinct raised lines; antenna with sparse greyish hairs, a first joint of the funicle longer than the second, which is as long as a third and fourth together, club brownish; prothorax a little longer

<sup>\*</sup> In the cut, the head is scarcely deep enough, and the little prominence in front is a draw-k,-F. P. P.

102

than broad; scutellum punctiform; elytra without bristles, the suniform throughout; legs reddish ferruginous with grey scales.

Hab. Gawler.

Length, 2 line

#### EPHERINA.

Rostrum longer than the head, and nearly as broad, increasing little towards the apex, which is emarginate, three raised lines abeach of the two lateral lines terminating in the raised edge round scrobe, the middle line extending to the apex; scrobes commencing the apex, extending backwards and gradually disappearing near eyes. Antennæ very long, scape clavate, extending to the elyfunicle 7-jointed, the first joint longest, the second twice as long the third, the latter equal with the remainder; club ovate, peduncul Prothorax equal in length and breadth, the sides rounded. Elynarrowly ovate. Legs moderately long; femora thickened in the midanterior tibiæ straight, with the inner edge sinuate; tarsi rather let the penultimate joint (fig. 2a) broadly lobed. Metasternum long. Abmen as in the preceding.

The above definition will probably require some modification the event of other species being discovered; but the general charact of the rostrum and scrobes show that the genus is very distinct.

# Epherina longicornis. (fig. 2.)

Elongate, black, covered with dull greyish scales; antennæ extend to the end of the elytra; prothorax apparently constricted at the bland apex, which are of equal breadth; scutellum nearly semi-circular elytra nearly twice the breadth of the prothorax at the base, the anter two-thirds of the sides nearly parallel, then gradually rounded but little produced at the apices, the interstices of the striæ with a line whitish bristles; legs dark ferruginous, with greyish scales.

Hab. Champion Bay.

Length, 21 lines.

# MYLLOCERUS.

Schönherr, Disp., Curc. Meth., p. 178; Lacordaire, Gen., vi, p. 21;

Schönherr gives as one of the essential characters of this gem thorax "postice bisinuatus," but a few species have been admitted in it having the base of the prothorax truncate. The character is, however, so persistent in a large number of species, that it appears to n to be desirable to exclude all those in which it does not exist. The species of this genus are numerous; three are found on the border Black Sea, and, therefore, European, but the majority are from rn India; I do not recollect seeing any in Mr. Wallace's collectom the Malayan Archipelago, and hitherto but one has been sed from Australia—M. australis, Bois.\*

ne following table will assist in the recognition of the species:—
ad narrowed below the eyes.

Scrobes approximate above.

Prothorax as broad at the apex as at the base ......M. herbaceus.

Prothorax much broader at the base.

Eyes round.

Form robust

Form more slender.

Pale green

Ashy

M. pudicus.

Eyes oblong...

Scrobes not approximate.

Head broad between the eyes

Elytra narrowly ovate

M. aphthosus.

M. aphthosus.

## Myllocerus herbaceus.

Moderately ovate, covered with pale golden-green scales with a tity opalescent tint; head and rostrum finely punctured, the latter ish above, with a decided angle as it descends towards the side; some testaceous, clothed with fine whitish hairs, scape slender; pro-ax transverse, with a slender impressed line in the middle, scarcely gracted at the apex, the base narrow; scutellum punctiform, distinct; as of the clytra with sharply defined, oblong, approximated punctures; eath and legs testaceous-yellow closely covered with bright goldenen scales.

Length, 2-2½ lines.

Hab. Champion Bay.

### Myllocerus aurifex.

Robust, broadly ovate, pale green or yellowish with a slight golden t, more or less mixed with patches or spots of fawn; head small, strum rather short and narrow, no median impressed line; scrobes proximating above and nearly reaching the eye; prothorax much rrowed anteriorly, the sides moderately rounded; scutellum comratively large, sub-cordiform; elytra very much broader than the othorax at its base, strongly convex; body beneath golden-green,

<sup>\*</sup> From the author's short description, this insect would appear to differ from the species described neath in having its under-surface of a silver-green.—F, P, P.

second abdominal segment as long as the first; legs ferruginous, or with pale greenish scales. Length, 4 li

Hab. Western Australia.

#### Myllocerus glaucinus.

Moderately ovate, covered with pale glaucous green scales and beneath; head small, rostrum short and comparatively na with a narrow median impressed line commencing between the scrobes approximate above, nearly reaching to the eyes; prothor in the preceding, but rather longer in proportion; scutellum smaller, nearly round; elytra with narrower intervals between striæ; antennæ and legs dull copper brown, with greyish scales hairs. Length, 31 lin

Hab. Champion Bay.

### Myllocerus pudicus.

Moderately ovate, covered with pale ashy scales; in other resp resembles the last, except that the funicle has all its joints thick shorter, the first only excepted—the is prothorax more transverse, the under parts are brownish-testaceous with white pearly scales.

Hab. Nicol Bay.

### Myllocerus cinerascens.

Length, 31 line

Slightly oblong ovate, covered with very pale ashy scales, disting mottled with brownish spots; head and rostrum narrowish, the latte little concave above, especially towards the apex, the scrobes sligh approximate; eyes slightly oblong; antennæ closely covered with p ashy hairs, the scape stoutish, the two basal joints of the funicle rat elongate; prothorax moderately transverse, the sides slightly rounded scutellum prominent, rounded; elytra about a third broader than prothorax at the base, the intervals of the striæ with a row of distin stiffish hairs; beneath and legs covered with pale, slightly silvery scal Length, 31 lines.

Hab. West Australia.

#### Myllocerus decretus.

Rather broadly ovate, covered with pale greyish scales; head som what broad in front; rostrum robust; scrobes not approximate, n approaching the eye; antennæ slender, first joint of the funicle only little longer than the second; prothorax moderately transverse, rounded at its sides anteriorly, parallel towards the base; scutellum smal pointed behind; elytra nearly parallel at the sides, the intervals of the with a row of bristles, each bristle arising from a well-marked re; beneath and legs covered with greyish scales mixed with hairs. Length, 31 lines.

lab. Champion Bay.

### Myllocerus aphthosus.

farrowly ovate, covered with pale yellowish-green scales having a tinge, and distinctly mottled with small opaque black spots; m rather broad, concave for its whole length above, the scrobes proximate; antennæ ferruginous, covered with greyish scales and the first and second joints of the funicle of nearly equal length; orax more transverse, the sides well-rounded; scutellum broader long; elytra parallel at the sides, the apex of each a little prol and rounded; beneath greenish-grey; legs pale ferruginous with Length, 31 lines. wish scales.

Hab. Cape York.

### Myllocerus rusticus.

Robust, broadly ovate, covered greyish-yellow scales mixed on the a with sparse recurved hairs; head small, rostrum short and ow, rather deeply excavated above; scrobes oval, not approximate; nnæ brown, first joint of the funicle much longer than the second; horax well-rounded at the sides, much narrowed at the apex; scum small, round; elytra shortly ovate, intervals of the striæ broad, with a line of sparse short recurved hairs, a large round spot of ge-brown on the declivity and above the apex, the latter not proed; body beneath and legs brown, clothed with greyish scales. Length, 41 lines.

Hab. Champion Bay.

### Myllocerus nasutus.

Narrowly ovate, everywhere covered with dull whitish scales; rosm with a square outline above, and as broad as the head, excavated vards the apex; scrobes oblique, not approximated, having entirely a esal aspect; eyes rather prominent; antennæ slender, the first joint the funicle a little longer than the second; prothorax scarcely anded at the sides, its base not much broader than the apex; sculum slightly elongate; elytra but slightly rounded at the sides, the clivity in some specimens with a brownish tint, the intervals of the iæ having each a decumbent row of narrower scales. Length, 33 lines.

Hab. West Australia.

Burlington Road, Westbourne Park, W. August, 1869.

Occurrence in Britain of Epuraa silacea, Hbst.-I have in my collect example of this fine species, the largest of the European Epurææ, which was to me by the Rev. Thomas Blackburn, who captured a few specimens in agar a rotten birch stump, at the foot of Cross Craig, near Camachgouran, Ranno July, 1866 (see Ent. M. Mag., Vol. iii, p. 94), and appears at the time to suspected their difference from large examples of E. deleta (a species varying 1 line to 11 lines), to which E. silacea is very closely allied, and from wh differs as follows: it is considerably larger (my specimen being rather over 2 in length), proportionably broader, entirely yellow in color (i. e., there a infuscate varieties of it), rather duller, on account of its closer punctuation its thorax is more rounded towards the front from the lower third. In the moreover (to which sex my specimen belongs), the middle tibiæ are sli widened and bent inwardly just before the apex; the corresponding members the same sex of deleta being quite straight inwardly, and only exhibiti rectangular point at the outer apex, which is obtuse in silacea. The apical of the club of its antennæ, moreover, is (though not wider) relatively more than in deleta, therein approaching E. astiva, from which its broader and fl build, sexual character, less dull appearance, and the broader lateral margins of thorax abundantly distinguish it.

Erichson (Ins. Deutschl., iii, p. 152) says E. silacea is moderately thickly finely punctured, and uses a corresponding phrase for E. deleta; but "creberrime" and "subtilissime" of Gyllenhal and Thomson appear to me the recorrect expressions.

Of the 24 recorded European species of this difficult genus (terminalis, Ma from Russia, and rubiginosa, Heer, from Switzerland, not practically entering the account, as they appear to be unknown, except as descriptions) we now pos 18, I think correctly named and distinct, the only one at all likely to sink eventually diffusa, Bris., as possibly a depauperized form of 10-guttata; and most, if all, of the remaining six may be expected to occur in this country. One of the indeed, viz., E. pygmaa, Gyll., has already been reputed as British in the 2nd of De Marseul's Catalogue, probably from that species being included in Steph works; the exponents, however, of it in that author's collection appear to be a E. astiva. But there is another and more credible British reference in Hardy Bold's Catalogue of the Col. of North. and Durham, where (p. 46) it is stated occur under bark of Scotch pine, and also (App. p. 247) to be common. Mr. E has kindly sent me examples of this insect, which must be referred to E. obsolet

E. pygmæa, according to Erichson, is the same size as E. florea, oblong, flatter (ovate and sub-depressed, according to Gyll.), brown, with ferruginous margins, with the middle tibiæ of the male slightly bowed at the middle of their inner si and somewhat widened internally at the apex. He assimilates it to angusto which, however, is more linear and has a longer thorax, and simple middle tibiæ the male.

The 17 species of Epuraa proper contained in Stephens are in Mr. Waterhous Catalogue sifted down to 8, two of which are doubtfully identified, and of fuscicollis, (Wat.) Steph., is identical with the above mentioned diffusa, Bri subsequently described and brought forward as a good species. Mr. Waterhous Catalogue contains 12 species, one of which, E. longula, Er., was erroneous

being only a disguised E. obsoleta: the true longula, has, however, been anly taken by Drs. Sharp and Power and myself at Esher. It is allied nga, obsoleta, and florea; from the first of which its darker antennal club, ar and less flat form and stronger punctuation,—from (immaculate vars. econd its lighter colour, more linear and parallel form, and the much ree of emargination, and, consequently, less prominent angles of the front orax,—and from the third its darker antennal club, narrower form, and the uterior emargination of its thorax (which is not, as in florea, truncate), will distinguish it.—E. C. Rye, 7, Park Field, Putney, S.W., Sept. 1869.

urrence in Britain of Mycetophagus fulvicollis, Fab.—Among some British aga recently sent to me for names by Mr. J. R. Hardy, of Hulme, is a d example of this rare and very interesting species. Its facies is much nat of one of the Heteromera (such as Mycetochares) than of a Mycetophagus; it was placed by Fabricius in his genus Directa. Having the five apical of the antennæ thickened, and the lateral margins of the thorax finely ted, it is most closely allied to M. multipunctatus, but is utterly unlike that . In color it slightly resembles certain varieties of M. piceus (which insect, about equals in length), having a black head, with reddish mouth; red ; spitchy elytra, on which are two yellowish-white bands (the upper one l obliquely backwards and not reaching the suture, and the lower one erse, but slightly curved) with a minute light spot between them, situated on rrow reddish-yellow margin; and reddish-yellow legs and antennæ, of which ub is darker. But its elongate, narrow shape, long pubescence, coarsely ate-striate elytra, and thorax rather narrowest behind, at once separate wicollis from all its allies.

dr. Hardy informs me that he captured the specimen above mentioned in 1865, in a fungus near the saw-mill at Dall, Rannoch.—ID.

Note on Otiorhynchus fuscipes, Walton.—It will no doubt be in the recollection e readers of this periodical, that Mr. Rye, some two or three years back ii, p. 181), raised in its pages the question as to the correctness of an elaborate r of the late Mr. Walton's on Otiorhynchus tenebricosus and fuscipes, Olivier. Rye's opinion was, however, immediately challenged by Mr. Smith (p. 232), supported Mr. Walton's verdict, and made at the same time some very cious remarks as to the discrepancy existing between Mr. Walton's description D. fuscipes, Ol., and a specimen of Dr. Stierlin's standing under that name he British Museum Collection. Mr. Crotch at the same time expressed an nion confirmative of Mr. Walton's, and it is with pleasure that I now add testimony to the correctness of Mr. Walton's remarks. I have recently de careful examination of some specimens, and have no hesitation in saying that have two distinct species corresponding most accurately with the characters down by Mr. Walton as distinguishing O. fuscipes, and tenebricosus. Indeed, render Mr. Walton's remarks as to the specific characters of the two insects rfect, it is only necessary to add to them that in the male of O. fuscipes the ngitudinal striæ of the last abdominal segment are considerably finer and more osely packed than is the case in O. tenebricosus. The question as to whether O. fuscipes of Mr. Walton is Olivier's species of the same name is, however another thing; this appears to have been doubted by Mr. Rye on account idea that O. tenebricosus and fuscipes, Walton, were but one species, whether tenebricosus and fuscipes, Ol., are generally admitted abroad as distinct species and also because a specimen of O. fuscipes sent to the Brit. Mus. by Dr. Sis a distinct species from fuscipes, Walton. The first of Mr. Rye's reason however, erroneous; and as regards the second, without expressing any very tive opinion, I will remark that it appears to me by no means improbable the O. fuscipes of Olivier, Walton and Stierlin will prove to be one species, and the specimen (in the Museum collection) referred to, has probably been hast erroneously determined by Dr. Stierlin.—D. Sharp, Thornhill, Dumfries, August, 1869.

[Dr. Sharp, in his discovery of British males of "O. fuscipes" exhibiting the rect sexual character, has evidently been more fortunate than I. I have example many specimens, including those in the British Museum, and all others that I get to see that have passed through the late Mr. Walton's hands, and have r been able to find any males except those exhibiting the sexual character tenebricosus. Mr. Waterhouse informs me that Mr. Walton, when engage those two species, separated the specimens in his collection which he suppose represent them, and that these specimens have so remained until the present These also, I have recently examined, and find the males of the so-called "fusci to be males of tenebricosus, with wide and coarse striations in the middle of the abdominal segment. Dr. Sharp's idea, that the fuscipes in the Brit. Mus., sent by Stierlin, was hastily or erroneously determined, is negatived by that auti published description of the species in question in his monograph, with which exponent agrees: moreover, I possess, and have seen other examples of fuscipes from different parts of the continent, all of which agree with Dr. Stierlin's ins I cannot believe that so able an Entomologist, monographing the genus, could take so common and apparently well known a species. My idea that Walt tenebricosus and fuscipes are but one species may, as Dr. Sharp observes, be e neous, but it was arrived at after examining specimens named by that an himself—who, though noting the correct sexual character for  $\delta$  of the former, or reference to it in describing the latter insect. If Walton's fuscipes be, contrary my opinion, rightly so named, his detection of an additional character in relative length of the joints of its antennæ may be added to Stierlin's diagnosis E. C. R.7

Autalia puncticollis taken in Northumberland.—Amongst a few insects taken on Cheviot, by my friend, Mr. James Hardy, in the last week of July, are to specimens of Autalia puncticollis, Sharp, a beetle not hitherto recorded as four in England, I believe.—Thos. Jno. Bold, Long Benton, Newcastle-on-Tyn September 19th, 1869.

Capture of Monohammus sutor, Linn., in Scotland.—On the 25th ulto., a sper men of this fine longicorn was captured by a workman on the timber at the mour of one of the coal pits in this neighbourhood. It was brought to me alive the

ning, and in perfect condition. I have not previously heard of the occurM. sutor in the northern division of the island; though, some five-andears ago, I saw a live specimen of M. dentator, Fab., in Glasgow. North
a timber stored at Port Dundas sufficiently accounted for its appearance.
eantime, I presume M. sutor is entitled to all the immunities of a free-born
ROBERT HISLOP, Blair Bank, Falkirk, 4th September, 1869.

idence as to the British origin of this specimen would be afforded by proof timber used at the coal-pit mouth was grown in this country, and not .—EDS.]

ture of Iassus cruentatus.—This rare Homopterous insect has occurred to use the present month at Witherslack, about four miles from Grange, where previously met with it, also a mile or two further on towards Milnthorp. Ind on Teucrium scorodonia in the pupal as well as the perfect state. The cost where I have seen the insect have one feature in common, namely, the of the yew-tree; this I mention on account of a question that was asked ecting its habitat, and I cannot but think there is something in it, although In vain to beat the yews.—Benjamin Cooke, 119, Stockport Road, Man-30th August, 1869.

the habits of Cecidomyia salicina, Schrk., marginemtorquens, Bremi, and Schrk.—The reddish-yellow larve of Cecidomyia salicina, Schrank, are now sad havoc in the tops of the leading shoots of Salix alba in the hedge rows neighbourhood.

eir attacks cause the young terminal leaflets of the shoots to wither and to small bud-shaped nidus, within which the larvæ, to the number of three to real so, pass their metamorphoses. The pupal state lasts from ten to fourteen When the perfect insects have left the shoots, the nidi rapidly wither away, brown, and at last drop at the slightest movement of the branch. Their se must exercise a check of considerable influence upon the growth of the of the year, but probably a beneficial result accrues to the plant as well, sap which would have served to push the young shoots on, will help to then the old wood instead.

nt as in the plantation of hedges an equal growth is generally aimed at, the rary mischief done by these midges cannot but annoy the proprietor, as it to the hedges a straggling look, caused by the remaining behind of so many shoots and their unsightly appearance.

. marginemtorquens.—The close dependence of many insects upon vegetation, to nicety and care displayed by the laying females, in the selection of certain dual plants in preference to others of the same species have, at all times, it to naturalists an inexhaustible field of observation.

With gall-makers of various orders, I have hitherto found it to be a prevailing that so far as ligneous plants are concerned, stunted shrubs or trees, or else as are impoverished by the effects of external injuries or old age, are chosen to deposition of eggs in preference to sound healthy ones. Plants growing in a part of the property of the prope

That the former is done in compliance with a general law can hard doubted, when we consider how effectually and persistently this singling weak specimens is carried out, for the evident purpose of their ultimate detion and replacement of healthier individuals.

As a case in point, I offer in this paper an account specifying the long tinued attacks of Cecidomyia marginemtorquens, Bremi, on a plant of Saliw vim

My diary records that-

1866, August 3.—I found the marginal rolls of this Cecidomyia, colalternatively red and yellow, in great numbers on the leaves of a straggling of Saliw viminalis, in the hedge-row of a garden at Penge. The willow ragged appearance, branches have been violently torn off, the bark removparts and the leading shoot is destroyed. The bush looks as if it had su repeatedly by the ruthless passage of man and beast, it being situated is weakest part of the hedge.

1866, August 17.—Still abundance of tenanted rolls.

1867, May 22.—Same willow in the hedge nearly trodden down by c Fresh rolls on many leaves of the intact shoots.

1868, June 5.—Plenty of rolls on the willow in the hedge on the few bra remaining; many shoots are clipped off.

1868, June 7.—Bred from such rolls both sexes of Cecidomyia margitorquens, Bremi, in numbers.

1868, September 27.—Noticed chains of fresh rolls on the same bus abundance.

1869, May 23.—Found first leaf this year bordered with several rolls on side.

1869, July 25.—Rolls in excessive numbers; majority of leaves thus infersectly any young shoots of the year growing healthily.

During all these years I have diligently searched the other bushes of willow in the same hedge for these galls, but can find none. In one of the new bouring gardens there grows a fine tall tree of the same Saliw; thinking the straggling bush in the hedge might annually receive its settlers from the have repeatedly, and at various times of the year, examined it, but always winegative result. Hence I am driven to the conclusion, that having accident been peopled with this gall-midge from a distance, this straggling bush, although the plenty more grow near, is annually fixed upon by the laying females as the resultable for their purpose, and will eventually succumb to the ravages of the progeny as one brood of larve succeeds the other, at intervals of about four we from May to October, the last brood hybernating in their cocoons in the faleaves till spring.

C. salicis.—From galls, encompassing some twigs of the preceding ye growth of a plant of Salix cinerea, collected near Penge, on the 11th Octo 1868, I bred a few specimens of this midge on the 26th June, 1869. In particular instance each gall harboured but one larva, and all I met with w full fed or nearly so. They remained in their larva state until the middle

the present year, when, without spinning a cocoon,\* they turned to pupe the galls. The mature pupa (examined 15th June) was 1½-lin. long, its orax, and all appendages pitchy-black, shining; abdomen dull tile-red, its ry rough. The basis of each feeler-case is provided with a sharp pointed two slender, tapering respiratory tubes stand behind the feeler-cases on the

on emerging, the pupa forces its way out of the gall by a series of wriggling, novements, until about half of its length is disengaged; the usual process ting the back of the thorax in a horizontal and afterwards vertical direction, as the gradual freeing of the head and limbs follow; and, when quite d, the imago discharges a drop of milky liquid.

e filmy white pupa-case is left protruding from the gall.—Albert Muller, Norwood, S.E., 16th August, 1869.

Now female of Colias Hyale.—In a letter which I received a short time since olonel H. Macchio, of Vienna, he says,—"I have reserved a yellow female Hyale for you." I believe many of these yellow females have been passed this country for males, as, among the small number of specimens of this dy which I saw last year (not more than thirty or forty), I found four of The ordinary female of Colias Palano is white; but I have three of the greenish-yellow colour as the males.—H. DOUBLEDAY, Epping, August, 1869.

n the larva of Pyralis glaucinalis.—To the Hon. T. de Grey I am indebted a opportunity of figuring and describing the larva of this species, he having it in the manner he has detailed in the following note:—

Thinking that the nest-like bunches of twigs, which may often be observed ving at the ends of branches on birch trees, might perhaps be tenanted by a larvæ or pupæ, I obtained one of these knots in April, 1867, and placed it large breeding cage, where I soon observed a few black active-looking larvæ, some old coccons containing empty pupa skins.

Having no conjecture as to what species these belonged to, I was much irested by observing on the 10th of June, a specimen of *Pyralis glaucinalis* at side of the breeding cage; others continued to appear, and on June the 13th, and a note in my diary, 'Larvæ, pupæ, and imago of *glaucinalis* all alive at the time.'

"On the 24th of June, I took out the knot, and by shaking and beating it ained from it twelve specimens which were by no means easily dislodged.

"The species continued to appear throughout June and part of July, till about ty specimens in all were bred from this one large birch knot.

"This year (1869) I again obtained knots from the same locality as before, if found them to contain old cocoons, and larvæ of the same species in various goes of growth; from these I bred a few specimens of the perfect insect about a middle of July.

Winnertz (Linnea Ent., vol. 8, p. 216), records, that this *Cecidomyia* turns to pupa in a web n the gall. I could not detect the slightest trace of any web or threads whatever. The pupe were simply in a cavity of the gall.—A. M.

"The clean white silken cocoon is semi-transparent, and of a texture we strongly reminds one of the skin immediately beneath the shell of an egg,

"that the silk is less opaque: it is placed among the twigs towards the cent

"the branch, but not attached to them, although the webs of the larvæ an

"the frass, and also of the numerous spiders which it contains, prevent the p bility of shaking it out: in spite of this, however, it is always quite clean."

On the 18th of April, 1869, Mr. de Grey kindly sent me several larvæ with t food—that is to say, a mixed mass of birch twigs, decomposed leaves and exmatter containing many old cocoons and pupa cases, some small tufts of she wool, and an old gun wad.

I separated this mass to look for the larvæ, but found that they immediate began again to construct loose silken galleries and thus re-united the variaterials of which it was composed.

At this date the youngest larva was about half-an-inch long, of a dull brownish olive-green; others were larger and darker, the colour darkening the growth, until the full grown larva was almost black.

When full grown, the length is from  $1_{\frac{1}{6}}$  to  $1_{\frac{1}{6}}$  inch; the form modera slender, cylindrical, nearly uniform in bulk throughout, the hinder segmentapering a little at the sides; the region of the spiracles puffed and wrinkled; segmental divisions deeply cut.

The colour of the back is a blackish, bronzy-green, becoming paler, of an o or ochreous-green tint along the spiracles, and on the belly and logs, the head, the 2nd and 18th segments; the plate on the second segment is margined in frewith blackish olive: a fine blackish undulating line, apparently caused by a dwrinkle, runs along below the spiracles, which are inconspicuous, being of surrounding colour, and merely outlined with blackish; the tubercular dots an little raised, each bearing a fine hair; the whole surface is shining and brolooking.

The first mature larva spun its cocoon on the 23rd of April, 1869; the cocoat first was soft and very flexible, of a brilliant silvery whiteness, its yielding s face readily betraying the movements of the larva within, but after a day or twenough silk had been spun to make it firm and unyielding; its length is about a bright in shape it is rounded at either end, very convex on both twenty upper and under surfaces, these curves not being continued round the sides, I meeting there in an acute ridge.

The image makes its exit at one end, but the edges of the orifice close togeth again, and the pupa skin remains in the cocoon, which shows no change whater in appearance.

The pupa is brown in colour, nearly half-an-inch long, stoutest at the thore and diminishing in the ordinary way to the anal point, which ended in a she spike. The old larva skin, though much shrivelled, showed it had been separate on the crown of the head and down the back, and was left in contact with the spike of the pupa.

The moths appeared on the 6th and 11th of July .-- WM. BUCKLER, Emsworth

to so the earlier stages of Eupæcilia ambiguana.—While collecting Eupæcilia at Haslemere, at the end of May, 1868, I noticed that about sunset the were to be seen flying about the flowers at the tops of the bushes of as frangula, apparently depositing eggs. On July 27th of the same year, on these identical bushes, berries fastened together with silk, and partially ut, and in them larvæ of which the following is a description:—

ad and back of 2nd segment blackish, anal segment brown, rest of body ak or reddish, but so transparent that the dark contents of the intestinal

give it a greyish tinge.

ach larva fastened several berries together, feeding only on their interior,
some instances the silken tube was continued to a neighbouring leaf, which
lded at the side, apparently as a shelter.

found about a dozen of these larvæ, and confined them in a jar with plenty d. When full fed, each cut an oval piece out of a leaf of the *Rhamnus* and it into a case, like that of a *Coleophora*, which it attached, by the end, to ganze which covered the jar, and to do this some of the larvæ must have all it several inches. One larva, however, fastened his case to a twig of mus, boring a little hole in the wood to fit its mouth, and this I judge to be a proposed behit.

ormal habit.

These cases I brought with me to Norwich, and watched eagerly in May for these cases I brought with me to Norwich, and watched eagerly in May for appearance of the perfect insects, but to my great disappointment not one appearance of the perfect insects, but to my great disappointment not one appearance of the perfect insects, but to my great disappointment and the larva state.

Although I feel certain that this is the larva of *E. ambiguana*, its case-making t is so extraordinary that I cannot expect others fully to accept my conclusion, therefore give these details in the hope that some one more fortunate may be sted to work it out.—Chas. G. Barrett, Norwich.

Hydrilla palustris near Norwich.—On June 5th last, I had the good fortune to e, by means of light, a male of Hydrilla palustris, at a very short distance from city. This was on one of the few favourable nights for collecting that occurred the early part of this summer, and the succeeding and many following nights be so cold that not an insect was to be seen, and consequently the search for re of this species was fruitless, but I see no reason whatever to suppose that is individual was accidentally introduced, or that it will not be found to be a pular inhabitant of this neighbourhood, and therefore think that it may safely be introduced into our lists.

Although it bears a considerable resemblance to some of the Caradrinæ, particuly C. Morpheus, its peculiarly thin abdomen forms a striking distinction from all them.—ID.

Acronycta alni, Cymatophora ridens, and Ecophora Lambdella near Plymouth.—
esterday I took a larva of alni on dogwood in a lane near here. It was reposing
a the upper surface of the leaf, as seems to be the habit of this species. In April
ast I took a specimen of ridens in my garden, and last month Ecophora Lambdella
ill to my lot. It was flying in the sunshine on the Revelstoke cliffs, about six
niles cast of Plymouth. This last was kindly determined for me by Mr. Stainton.

—Rich. P. Murray, Plymstock, Plymouth, August 19th, 1869.

Occurrence of Agrotis saucia at Edgware.—On the 8th instant, I took a of Agrotis saucia at sugar in my garden here. I fancy this insect is not often in the neighbourhood of London.—ARTHUR COTTAM, Stone Grove Cottage, Edg September 15th, 1869.

Capture of Aplecta occulta at Lee.—I have to record the capture of a sing specimen of the above-mentioned insect, which I took at sugar, at the en August. There were two other specimens of the same insect on the tree, before I could box them, they escaped.—John T. Scott, 37, Manor Park, September 7th, 1869.

Notes on Clisiocampa castrensis, Mamestra abjecta, &c., at Gravesend.the 10th of July last we paid a visit to the banks of the Thames below Graves for the purpose of collecting the larvæ of C. castrensis. To the fact of the being one of unclouded sunshine, we are disposed to attribute the success w attended our search.

At 10 a.m. we commenced operations among a clump of their favourite the Artemisia maritima. At this time the larvæ occurred only sparingly, but, as approached, they became much more abundant, crawling up from their retreat sun themselves on the branches of their food. After one o'clock they became have been such scarcer, probably owing to the number of our captures, but also in a measure to the circumstance of their retiring again to the root of the plant.

We found them in several stages of their growth, some quite small and otl about to assume the pupa state, several spinning their cocoons on the journey he

By searching among the long grass growing near the top of the sea wall, found the cocoons not uncommon; many of these, however, especially in mexposed situations, were empty, the pupse having been extracted by birds.

As none of the larvæ captured were ichneumonized, we presume that be are the agents by which the excessive increase of this species is prevented.

Having the reputation of being difficult to rear, and not being able to sup the larvæ with their natural food, we adopted two modes of treatment towa them; some we enclosed with muslin on a growing plant of the garden *Chrys* themum, the remainder we supplied with *Polygonum aviculare*. They did equi well in both cases, and have now all assumed the pupa state.

Feeding them on the latter plant, however, involves a greater amount trouble, as they must be supplied with fresh food daily, for if at all faded, the refuse to eat it. It is also necessary that they should be placed in a sunny sittion, as they appear only to consume that part of the food to which the sun's rehave free access. The duration of the pupa state is about three weeks, the fiperfect insect from the larvæ collected appearing on the 4th of this month.

At sugar at the same locality, and on the same occasion, we took seve beautiful examples of Mamestra abjecta: also a few of Senta ulva, Leucania obsole and a number of Agrotis corticea; and, by mothing, Acidalia emutaria, Leucar phragmitidis, and L. straminea.—C. MILLER and Albert H. Jones, Eltha August 18th, 1869.

d the following species at Witherslack, viz.:—Stilbia anomala, Penthina Orthotania ericetana, Tinea albipunctella, Hyponomeuta plumbella (which I take near Gravesend 20 years ago), Depressaria carduella, granulosella, a punctella, Zelleria hepariella (amongst yew), Asychna profugella (also on nd Bucculatrix aurimaculella.—J. B. Hodgenson, 15, Spring Bank, Preston, ber 6th, 1869.

olias Edusa in Lancashire.—On the 27th of August I saw Edusa a few miles of Lancaster on the railway bank.—In.

aptures of Lepidoptera in Westmoreland.—On 16th July last, I met Mr. J. B. kinson at Preston, and with him proceeded north to Grange for Witherslack, , by sweeping amongst Trifolium filiforme, we took Coleophora Fabriciella and via ligulella, and, among wild thyme, Gelechia Sircomella and senectella and hecia constrictata. Amongst mixed plants, where Conyza squarrosa grew , we found Sciaphila perterana and octomaculana, Euchromia rufana? and rampha consortana; by beating sloe-bushes, Pædisca bilunana, Ephippiphora tana, Argyresthia albistriella and Olindia ulmana; by beating yews, hollies and ers, Lithosia complanula, Eupithecia pumilata, Crambus pinetellus, falsellus geniculellus, Scoparia cratogello, cembrella, muralis and atomalis, Dichelia iana, Tinea semifulvella, Phlæodes immundana, Hypsolophus marginellus and estia semirufa; by sweeping flowery banks, a new species of Argyrolepia, of h more hereafter, and Chrosis tesserana: where Conyza squarrosa grew on the s, we took Pterophorus acanthodactylus; amongst wild sage, Pterophorus anniodactylus (Gregs., n. s.); amongst Scabiosa columbaria, Pterophorus scabioylus (Gregs., n. s.); amongst golden rod, Pterophorus tephradactylus; and, re Knautea arvensis grew freely, Pterophorus plagiodactylus, and P. fuscus ngst Veronica chamædrys, whilst Argyresthia præcocella was beaten from junis, and A. Andereggiella from apple-trees. On the moss, we got Sericoris politana Nemoria viridata, amongst Myrica gale; Gelechia ericinella on heather; Elachista comella amongst Dactylis glomerata; Elachista cerussella, rhynchosporella and st, but not least noteworthy) serricornis flying over or swept from cotton-grass riophorum). This last species alone led us out to the moss, after a warning from farmer at the "Far-a-way Farm," that "them cleggs fair druv him off t' ss-edge i' t' morning, when he wer maaing; an' nae man cud stan' um at nete:" t Mr. Hodgkinson had once taken E. serricornis on Witherslack moss, so away went. The cleggs and midges did bite, nay, fairly covered us; and, after about to hours' suffering, both of us having taken the long desiderated species, we treated in good order, and, by dashing into the long grass and reeds growing in e ditches of the drained laud, obtained relief from our tormentors. Soon wo nrned our attention to the Valerian plants growing on the banks of the ditches, nd on them found the larvæ of Eupithecia valerianata from just hatched to full ed; these we secured in plenty, and slept that night the sleep of the tired-out but ontented naturalists.

Note: there are two or three critical species amongst our captures that may form the subject of another note when they come off the setting boards.—C. S. GREGSON, Rose Bank, Fletcher Grove, Stanley, Liverpool, 20th July, 1869.

116

Note on names and food of some species of Plicata. - Scoparia cratagalis ( gella, Hub.)-This name implies that the larva of this species feeds upon haw-thorn (Cratagus oxyacantha). Nothing can be more injurious to entomole science or to our progress than to give an insect a name from a plant it does feed upon; a recent instance of this is afforded by Scoparia ulmella, the sp name of which appears to have misled one of our most acute practical friends Ent. M. Mag., Vol. 6, p. 41). Having bred most of the genus Scoparia, present constituted, I may say that so far as I know they feed exclusively hepatics, mosses, lichens, and algae (Confervae). Thus, Scoparia cratagalis upon Hypnum elegans and Jungermannia dilatata; as do also S. cembrella (cen Haw.) and the old mercurella (mercuralis); muralis (murana, Curtis) feeds Grimmea pulvinata (the cushion-moss), in company with Crambus falsellus lineolalis (lineola, Curtis) feeds upon and lives under Parmelia parietana an olivacea, lichens which grow upon rocks and old thorns, &c.; and S. resi (resinea, Haw.) feeds upon Stigoneura mammillosa and Oscillatoria autumn living in galleries under the Conferva, and also on Bryum cespitosum, when grow as this moss frequently does here, amongst the above Algæ at the bases of d walls, &c., on road sides. That some of these species eat other allied plan know, but I am not aware of any Scoparia or Crambus which finds sustenance t trees or shrubs, except that the mosses and lichens they eat sometimes grow t them and that the perfect insect often shelter upon or amongst their foliage: have no connection with any arboraceous plants as food; and, thinking these hints may be useful to any young friend who may venture into the l known question of the food of our Plicata or Crambida, or both, I may say, "d look for larvæ of Scoparia crategalis on hawthorn hedges, or for those of Cran pinetellus upon fir-trees, but rather upon the lowest order of plants."-ID.

[We cordially agree with Mr. Gregson, that it is most undesirable to f specific names of insects from those of plants, on the bare supposition that larvæ feed on such plants, and that few things are "more injurious to sciens But why, does he, with so keen an appreciation of purity in nomenclature, asl to print such names as "Britanniodactylus" and "scabiodactylus" (see his for communication)? On the continent, hybrid names (half Latin, half Greek), s as punctidactylus and parvidactylus are universally ignored in the published Liu and Mr. Gregson must be prepared to see his species above quoted share the sa oblivion as "Millieridactylus," "Schmidtiformis," &c.—Eds.]

Note on period of appearance of larva of Polia nigrocincta.—Mr. Doubleday s. I have made a mistake in my "accounts" of the larva of this species. I can o repeat my statement, that with me the eggs obtained at the Isle of Man hatel as reported at p. 64, vol. vi, Ent. M. Mag.; that the larva is there described, accurately as I can "word-paint," in its various stages, and in every way correct and that from it was produced the insect known to us as Polia nigrocincta.

By a mistake in punctuation, in line 5 of p. 65 of the above-mentioned vol. appear to state that this larva makes its puparium "during the day-time;" the carpression was intended by me to refer to the preceding sentence, in which habit of concealing itself is referred to. At line 11 of the same page, all "Duchan" should be "Onchan."—ID.

ucity of insects in 1869.-From letters I have received from my corrests, and from notices which have appeared in various Natural History cals insects (at any rate so far as Lepidoptera are concerned) appear to have nusually scarce this season. If this be the rule, I think this neighbourhood dedly an exception, as, although insects cannot be said to have been larly abundant, I consider we have hada fair average season. Several have appeared in the "Entomologist" on the great scarcity of the Pieridasouth, and the Editor of that periodical seems to think this to be the case lly throughout the country. Rapæ we have had in plenty, though I do not ct noticing so many of brassica as usual. Larvæ of Dicranura vinula have nore numerous this season than I ever noticed before; I have repeatedly hem brought to me as "remarkable creatures" from widely separated of the district. Spring insects were rather scarce, probably owing to the rinter having destroyed the pupæ, but taking the season as a whole, I think epidopterists here will agree with me that they have no cause for complaint. o. T. Porritt, Clare Hill, Huddersfield, 4th September, 1869.

White Butterflies (especially brassica) have certainly been unusually scarce ear in most parts of the country; and notably so, as compared with their me abundance in 1868, when our cabbage-gardens, from their ravages, made asigntly exhibition of skeletonized leaves.—Eds.]

The larva of Bombyn quercus will eat heather.—I have once or twice been asked orrespondents "Will the larva of quercus eat heather?" and this scason, and collected on the Lancashire coast a few larve of that species, have had an ortunity of satisfying myself on the point.

On supplying them with heather (Calluna vulgaris), they immediately began ing with apparent relish, although an abundance of fresh hawthorn (on which had previously fed) had just been taken out of the cage. Of course it is well wn that callunæ will eat almost anything that quercas will.—In.

Variation in Zygana filipendula.—Out of some fifty specimens of this insect d from pupa, I have three varieties. The most extraordinary is of a splendid nge-colour instead of red. Two others had one under-wing red and the other nge.—W. Jager, St. Ives, Hunts, 20th July, 1869.

The Entomological Society of London.—The first meeting of the next session this Society will be held in the rooms of the Linnean Society, in Burlington buse, on Monday, the 1st of November. Instituted in 1834, the Society has, by publications, obtained a standing second to no kindred association in Europe; to the support from active entomologists which it deserves, pecially when the advantages connected with it are duly considered. The present may be a favourable opportunity to gentlemen wishing to enter its ranks. Any afternation respecting the Society will be readily afforded on application to either the two Secretaries (Mr. J. W. Dunning, of 24, Old Buildings, Lincoln's Inn, V.C.; or Mr. R. McLachlan, of 20, Limes Grove North, Lewisham, S.E.) The anniversary Meeting will take place towards the end of January, 1870; but subscription for the remainder of the present year.

NOTICE OF A NEW ORDER OF HEXAPOD INSECTS.

BY PROFESSOR J. O. WESTWOOD, M.A., F.L.S.

In the course of last year, Mr. H. Denny placed in my hand examination a parasitic insect, found upon the beaver, which seem first sight half-way between a flattened flea and a diminutive cockro and which has proved to belong to none of the recognized Order hexapod Annulosa. I read a description of this insect, under the n of Platypsyllus castorinus, before the Ashmolean Society of Oxiduring Michaelmas Term, 1868; but, as that Society is very dilator publishing its Proceedings, I send a short notice of the character the insect for publication in 'The Entomologist's Monthly Magazi

### Order, ACHREIOPTERA, Westwood.

Corpus ovale, valde depressum, coriaceum, setigerum.

Os (mandibulis?) maxillis, labio palpisque quatuor instructum.

Antennæ laterales, postice reflexæ, tri-articulatæ, articulo ultimo (u Pulice) annulato.

Prothorax magnus, scutiformis, margine postico sinuato.

Mesothoracis scutellum triangulare.

Alæ anticæ coriaceæ, planæ, venis carentes, breves, coalitæ, basin abdom attingentes ; sutura recta.

Alæ posticæ obsoletæ.

Pedes cursorii (saltatorii?), tibiis calcaratis, tarsis quinque-articula bi-unguiculatis.

Metamorphoses ignotæ.

Victus parasiticus in Castorem, more Pulicis.

### PLATYPSYLLUS, nov. gen.

 ${\it Caput}$  horizontale, semi-circulare, angulis posticis sub-truncatis, anten truncatura insertis.

Antennæ longitudine dimidium prothoracis æquantes, articulo bas elongato, cylindrico, secundo cyathiformi, extùs longe seto tertio ovali, ex annulis octo (ut in Pulice) formato.

Maxillæ motû transverso, lobis duobus apicalibus instructæ, exter majori, semi-ovali, plano, apice spinuloso, extusque densè setiger interno tenuissimo, membranaceo, margine sub-spinuloso. Pal maxillares quadri-articulati, articulo ultimo conico.

Mentum oblongum, corneum, jugulo transverso antice insidens.

Labium transversum, lateribus in angulum productis, margine anti-

narginato. Lingua e lobis duobus tenuissimis rotundatis formata.
'alpi labiales breves, tri-articulati, conici, scapo parvo basali
ransverso insidentes.

atum transversum, antice emarginatum, postice sensim dilatatum, ateribus curvatis, versus angulos anticos incisis (pro receptione antennarum), angulis posticis rotundatis, setis longis instructis.

a tria elevata, plana, cornea, sensim magnitudine decrescentia, haustellum magnum tri-articulatum simulantia), lateribus setis longis instructa.

s robusti, compressi, cursorii, spinosi (an saltatorii?), coxis magnis; tarsi quinque-articulati, unguibus duobus robustis terminati.

anticæ elytriformes, coalitæ, angulis posticis rotundis, suturâ rectâ. Alæ posticæ obsoletæ.

omen semi-ovale, planum, sex-articulatum.

### PLATYPSYLLUS CASTORINUS, nov. sp.

Luteo-fulvus, nitidus; capite utrinque punctis duobus (loco oculorum, margilateralium medium versus), sulco profundo utrinque cum margine laterali dlelo, margine postico pectinato; pronoto utrinque serie punctorum ex angulis cis scutellum versus extensa, alteraque cum margine pronoti postico sinuato ullela; abdominis segmentis dorsalibus linea spinarum plurimarum, marginem cieum versus, ut in Pulice, armatis.

Long. corp. lin. 11=4 mill.

Habitat parasitice in Castorem canadensem.

ford, September, 1869.

### A NOTICE OF THE SKANDINAVIENS FJÄDERMOTT OF H. D. J. WALLENGREN.

BY R. C. R. JORDAN, M.D.

Through the kindness of Herr Pastor Wallengren, I have received copy of his monograph on the Swedish plume-moths, and the diagnoses of the different genera there given have seemed to me of sufficient atterest to make a notice of them worthy a place in this magazine. Infortunately, I can only guess at the Swedish part of the monograph a very imperfect manner, but the Latin diagnoses give details of generic characters, which, in the case of the present group, have been very imperfectly studied by English Entomologists, and therefore cannot fail to be extremely useful.

The Swedish plume-moths consist then of the following genera

#### 1. CNEMIDOPHORUS (Wallengren).

Antennæ of both sexes with very short cilia. Forehead without an only a few slightly prominent hairs between the antennæ. Palpi not longe the head, the intermediate joint thickened with down, the last joint shor pointed. Legs short, all the tibiæ thickened towards the apex by a tuft of a the posterior tibiæ thickened in the middle. First pair of spines in the pot tibiæ slender and very unequal, second pair nearly equal. Anterior wing divided to a third part of their length, the segments broad, the posterior seg almost hatchet-shaped, the posterior angle of both segments well marked. divisions of the inferior wings wide, the third segment with the anal angle directions and the segment with the segment with the segment with the same and the covering the inferior, the inner margin not toothed.

This genus contains only one Swedish species, found also rarely in the south eastern part of our island, viz., Cnænidoph rhododactylus. That this insect is rightly separated from the genus Platyptilus of Zeller there can be no doubt; the difference in the palone would be sufficient for this. The name seems taken from thickened tibiæ; but why the diphthong should be used and the written Cnænidophorus is to me unintelligible.

### 2. PLATYPTILUS (Hübn.) (Zeller).

Antennæ of both sexes with very short cilia. Forehead adorned with a or less elongated tuft. Palpi longer than the head, rather rounded, slightly asc ing, with the last joint more or less elongated, sometimes a little drooping. longer, slender, the tibiæ sometimes slightly thickened towards the apex. pair of spines in the posterior tibiæ slightly unequal, second pair almost ec shorter than the shortest spine of the first pair. Anterior wings not divide the third part of their length, the segments broad, the posterior segment alr hatchet-shaped, the posterior angle of both segments well marked. The segment the inferior wings more slender, the third division with the anal angle sufficie marked, but nearer to the base. The anterior wings flat, covering the inferior whe rest. The veins of the anterior wings ten in number; 1st and 2nd separate, com from the base, the 3rd from the posterior margin of the cell, the 4th and 5th fi the posterior angle of the cell, all running into the posterior segment, the coming out near the anterior angle of the cell, and running into the posterior ar of the anterior segment, the 7th two-branched, coming out from the anterior ar of the cell, and running into the apex of the anterior segment, the 8th and coming out from the anterior side of the cell and running into the anterior mar of the wing, the 10th coming from the base and ending almost in the mid of the anterior margin. The cell well marked, with a very slender little transve vein, almost straight, closed. Veins of the posterior wings three in number; 1st coming from the base, two-branched running into the anterior segment, 2nd three-branched, running into the second division, and the 3rd simple, runni into the third division. No cell.

121 1869]

e species described as Swedish are Platyptilus ochrodactylus, erstedtii, P. nemoralis, P. gonodactylus, and P. tessaradactylus; tter species, which is known on the continent as P. Fischeri, eing supposed by our author to be the tessaradactylus of Linné. robable that under ochrodactylus the two species dichrodactylus ertrami are both included, since the monograph bears date 1859, e larva is recorded as unknown. This would make six Swedish s of this group. We have only five in Great Britain, viz., P. lactylus, P. Bertrami, P. isodoctylus, P. Zetterstedtii, and P. actylus. Of these, P. isodactylus is apparently unknown in on, and, on the other hand, P. nemoralis and P. Fischeri are not with in Britain. The larvæ of this group are feeders in the of composite plants. P. Zetterstedtii is one of the rarest of our plumes, and seems, as far as we at present know, to be conto the south-western sea-board. Owing to the kindness of Mr. leday, I have at present two fine specimens lent me for examinataken by Mr. Bond on the Cornish coast; and Lynmouth is given other locality. The Isle of Man and Ireland should be examined his species. The larva, according to Wallengren, feeds on Senecio rensis. It must in England, of course, choose some other compo--probably also a Senecio.

## MBLYPTILUS (Hübn.).

Antennæ of both sexes with very short cilia. The forehead ornamented with a pyramid of scales. Palpi longer than the head, thick, laterally compressed, nding, with the last joint short, slender, and pointed. Legs slender, long, the only in the least degree thickened towards the apex. First pair of spines in posterior tibiæ nearly equal, longer than the second pair. The anterior wings ished with a tooth of scales on their inner margin, not cleft to the third part neir length. The segments broad, the posterior segment almost hatchet-shaped, posterior angle of the segments well marked. The segments of the inferior gs slender, the third segment with the anal angle sufficiently distinct, nearer apex, furnished with a tuft of scales. The anterior wings flat, covering the terior when at rest.

This group contains the same species in Sweden as with us, mely, acanthodactylus and cosmodactylus. Our author regards them varieties only, a conclusion with which British entomologists will rdly agree.

### OXYPTILUS (Zell.).

Antennæ of both sexes with very short cilia. The forehead obtuse, wanting the of or cone entirely.\* The palpi longer than the head, thick, laterally compressed,

<sup>\*</sup> Except in Bohemani?-R. C. R. J.

122 (Non-

ascending, the middle joint tufted at its apex, the last joint longer than the slender, pointed. Legs long and slender, the posterior tibiæ thickened with at the middle, and at the apex. The first pair of spines in the posterior almost equal, the second pair shorter than the shortest spine of the first pair. anterior wings cleft more than the third part of their length. The segn slender, the anterior segment with no posterior angle, the posterior segment the angle distinct. The segments of the posterior wings slender, the third seg linear, and with no anal angle. The anterior wings flat, when at rest covering posterior; the inner margin of the anterior wings not toothed, the fringe of third segment in the posterior wings with some black scales near the apex. of the anterior wings eight in number; the 1st and 2nd separate, springing the base, the 3rd from the posterior margin of the cell, the 4th dividing into branches, running from the posterior angle of the cell to the posterior segr the 5th coming out near the anterior angle of the cell, and running to the post margin of the anterior segment, the 6th either two or three-branched, rur from the anterior angle of the cell to the apex of the anterior segment, the from the anterior side of the cell, and the 8th from the base. The cell dist closed, the transverse vein very slender, somewhat arched. The veins o posterior wings three; the 1st two-branched, running to the first segment 2nd also two-branched, running into the second segment, the 3rd simply run into the third segment. No cell.

The Swedish species of this genus are six, viz.:—1, O. pilose 2, O. hieracii, 3, O. ericetorum, 4, O. obscurus, 5, O. didactylus, and O. Bohemani. Of these, two only have been as yet proved to British, namely, O. pilosellæ and O. obscurus, although it is probitated O. hieracii, if not O. ericetorum and O. didactylus, will, if caref sought for, be added to our lists. None of the lighter coloured speare met with in this list. In England we have four species of O. pilosellæ, O. teucrii, O. obscurus, and O. lætus.

This last was added to our lists last year by the Hon. Mr. Grey, who caught it at Thetford, a locality already celebrated for southern types. One specimen I have (thanks to the kindness of captor) had the privilege of examining; it certainly differs in separticulars from any specimen of lætus which I have seen before, as it is certainly most closely allied to, if not identical with, t species, it seems most desirable to call it lætus for the present, await the decision of Professor Zeller, to whom it is referred for examinating The addition of one of the lighter coloured forms of the genus to British lists is, however, full of interest. On the continent, the lafteeds on the flowers of Andryala sinuata; it is probable that here so species of Hieracium would be chosen.

### MÆSEOPTILUS (Wallengren).

tennæ of the male fringed with very short hairs. rinto a blunt cone. Palpi longer than the head, compressed laterally, vidle joint thickened above with hairs, the last joint short, blunt, scarcely to inguished from the preceding. The posterior tibiæ slender, not thickened. rst pair of spines in the posterior tibiæ equal, the second pair slightly un-The auterior wings cleft to a third part of their length, the segments more r, the upper one with a distinct posterior angle. The posterior lanceolate he posterior angle not well defined. The segments of the posterior wings er, the middle segment dilated so as to be somewhat spoon-shaped, the third sterior division without any black scales in its short fringe. The anterior not perfectly flat, their anterior margin being very slightly deflexed, their margin without a tooth, and, when at rest, slightly deflexed, so as to embrace osterior wings. The veins of the anterior wings ten in number; the 1st and eparate from the base, the 3rd from the posterior margin of the cell, and the and 5th together from the posterior angle of the cell, all running into the erior segment; the 6th rises from the little transverse vein near the anterior s of the cell, and the 7th, which is two-branched, rises from the angle itself, erun into the anterior segment; the 8th and 9th arise from the anterior margin he cell, and run into the anterior margin of the wing; the 10th arises from the of the wing and runs also into its anterior margin. The cell is distinct, closed, a very slender, spurious, transverse veinlet, moderately curved, with the conity turning towards the base of the wing. The veins of the inferior wings are r in number; the 1st two-branched ending in the first segment, the 2nd twonched, ending as well as the simple 3rd vein in the second segment (this 3rd n generally joins with the 2nd at the base), and the 4th vein simple ending in third segment. No cell.

There are four Scandinavian species of this genus, namely, M. serotinus (bipunctidactylus), M. pterodactylus, Linné or Herr Wallengren believes our fuscus to be the pterodactylus of inné), and M. paludicola, Wallengren. Our British species are more umerous, viz., M. plagiodactylus, M. serotinus, M. Hodgkinsoni, M. Loewii, and M. fuscus, five in number; it is probable, however, that nuch confusion exists in collections, with regard to this group. Serotinus and Loewii from different localities need special examination, and to would be conferring a great favour on me if entomologists who take any species of this genus would lend me specimens for comparison. M. mictodactylus should be carefully looked for in England; the larva feeds on Saxifraga granulata, a plant which in many localities is common in our island; and the moth flies in May and June. This plume would make a splendid addition to our lists; it is a large insect, nearly the size of fuscus, and more resembling plagiodactylus than any other of

124 Novemb

our native species, but the ground colour of the wings is a pale as brown, dark brown along the outer margin, a dark brown dash at anterior superior angle, a brown spot or rather a dash at the fissurand a brown dot about half-way between this and the base of twing. No one could confuse this with any known British Plume. The larve of serotinus are stated by Wallengren to feed on Galium (sp. noted) and Scabiosa arvensis. It is stated to have two broods, of appearing in June and the other in September and October, and the larva to be met with in May. In the south of England this spechas occurred to me in May and August. The M. paludicola Wallengren is thus described:—

Anterior wings above greyish-brown, darker towards the costa, the back wid bordered with ochreous. A twin brown spot at the fissure, the external border the whole costa lined very narrowly with white, with one or two indistinct bro spots at the inner angle of the cilia of the anterior segment, and with a bro indistinct streak at the apex of the posterior segment.

As in Zeller's *Isis*, this Plume stands as *Pterophorus fuscus*, var. it must resemble that species very closely, but to none of a large a varied series of *fuscus* in my own collection does the description appleseveral are greyish-brown instead of cinnamon-brown, and many he also a twin spot at the fissure, but none have the *whole* costa edg with white. The most remarkable specimen of *fuscus* which has fall under my own observations was sent me from the Lake district, by thindness of Mr. Hodgkinson. Of this specimen, the following brodescription may not be out of place, as it certainly has quite that appearance of a distinct species:—

Size of a very large "fuscus:"—Anterior wings cinnamon-brown, outer I rather more dusky than the inner portion which has an ochreous tinge, spot at a fissure replaced by a very narrow black streak beginning at the fissure and extering more than half-way towards the base of the wing, below this is another fablack streak along the fold; in the upper segment, parallel with the fissure in the apex of the wing, is another well marked black streak, fringes dusky brown almost unicolorous, though there is rather a fainter line marking the border of wing. At the extreme apex of the superior angle of the lower segment is a minublack dot. Posterior wings dusky brown, with fringes of the same colour.

A few words more on our British Mimæseoptili. Phæodactyl certainly does not belong to this group, nor to any of the Swedi genera, but perhaps some continental entomologist has, unknown me, already characterised the genus. Its position is well indicated

nger's list between the Oxyptili and Mimæseoptili; it there follows bergianus, a doubtful European species which I have never seen. true Mimæseoptili, plagiodactylus is undoubtedly British, and rst discovered in Wales by Mr. Greening; the larva feeds on sa columbaria. Some specimens from the Lake district have  ${f d}$  to me to resemble  ${\it M. graphodactylus}$  most closely.\*  ${\it M. Hodgkin}$ discovered by Mr. Gregson, and first described in the pages of Magazine, does not resemble any European species seen by me, and nus seems its closest ally; its food plant is unknown to me.  $\ddot{u}$  is widely distributed, occurring in South Devon, in the eastern ties, and in the Lake district; it is, however, nowhere common. larva feeds on the seeds of the pretty Erythræa centaurium. This, fuscus, well known to haunt Veronica chamædrys, complete our vn native species of this group. They probably want more revision any other section of the plumes.

# DIDEMATOPHORUS (Wallengren).

Antennæ of both sexes ciliated, with the basal joint very much thickened. shead obtuse, with the scales not forming a cone. Palpi longer than the l, ascending, slender, somewhat rounded, the joints distinct, the last short, at. The tibiæ of all the legs thickened at the apex, and those of the second even thickened in the middle. The spines of the posterior tibiæ short, of the t pair unequal, of the second pair almost equal. The anterior wing cleft to the d part of their length, the segments somewhat slender, no posterior angle to anterior segment, that of the posterior segment not well marked. Segments of inferior wings slender, the middle segment dilated like a spoon, the fringe of the sterior segment, without black scales. The anterior margin of the upper wings flexed, the posterior margin toothless, with the whole of the lower segment both flexed and turned in so as to form a channel in which the inferior wings lie when e insect is at rest. Veins of the anterior wings nine in number, all simple; the t from the base, the 2nd and 3rd from the posterior side, and the 4th from the sterior angle of the cell, all running into the posterior segment, the 5th from the aterior angle, and the 6th and 7th closely approximated, and the 8th all from the aterior side of the cell, these run into the anterior segment, the 9th rises alone om the base. The 1st, 6th, 7th, and 8th veins are very slender. The cell disinct, closed. The transverse veinlet very narrow, arched, with its convexity urned towards the base of the wing.

The only Swedish, and the only British, species of this genus is lithodactylus. In Sweden, the larva feeds on Inula salicifolia; in England, on the well-known Inula conyza (or, as it is sometimes termed, Conyza squarrosa) and I. dysenterica.

(To be concluded in our next.)

<sup>•</sup> The larva of  $\mathit{graphodactylus}$  should be looked for on the seeds of  $\mathit{Gentiane}$ , -R, C, R, J,

126 [Note:

# OBSERVATIONS ON THE CECONOMY OF THE BRITISH SPECIES OF SCOLYTUS.

#### BY T. ALGERNON CHAPMAN, M.D.

- 1. Scolytus Ratzeburgii, Janson. It is somewhat unfortum that I should at the commencement of my observations be compel (after the manner of a certain chapter "On the Snakes of Iceland to omit any remarks upon the very first species: Coleopterists, he ever, are well away that S. Ratzeburgii has hitherto occurred with only at Rannoch, in birch trees; and further particulars of it will, course, be found in the "Entomologists' Annual" for 1856, p. 86, which Mr. E. W. Janson introduced the species. All our remaining Scolyti I have found in this district.
- 2. Scolytus destructor, Ol. This, the next largest in size S. Ratzeburgii, and the commonest of our species, may be found ear in June making its galleries of oviposition in any elm trees fell during the previous winter, and usually in such numbers as to ensu the destruction of the bark. I do not recollect to have seen it timber smaller than 8-in. in diameter. The female makes her we along the bottom of some crack in the bark, often by widening it f some distance, before commencing to burrow, so that the real opening of the gallery is some distance from where the little heap of out-turne frass lies which marks its orifice.

The male is present for only a brief interval, viz., after the burro is well commenced, but before any eggs are laid, and I once found a pa in cop. at this period. The burrow is usually about three inches lon (very rarely five inches), almost always close to the wood and slight encroaching on it. Its construction occupies about three weeks. The eggs are laid along either side close to the bark, the cavities in which they lie being somewhat irregular, not nicely fitting the egg as with Hylesinus. The eggs in a burrow number about 100, but I have me with more than 160 in one. They are covered by a rather thick continuous layer of frass, which also lines the floor of the burrow, an extends partially into the roof.

The young larvæ, starting at right angles to the parent gallery which is parallel with the axis of the tree, form a very regular "typo graph," at least in those somewhat rare instances, in which contiguou broods do not interfere with each other. Most of the larvæ are ful fed towards the latter part of July, and I daresay that, in favourable seasons, there are sometimes two broods in a year. A certain propor

sume the pupal state at the end of the larval burrows, become and emerge during August; but what becomes of these beetles of know. I find no trace either of their ovipositing during the an of their hyberuating; for, though S. destructor begins its as earlier than the other Scolyti, it is several weeks later than the state bark beetles that pass the winter in the perfect. The greater number of the larvæ when full fed burrow about a inch into the wood, where they form a little longitudinal her, the entrance of which is tightly filled with frass, and in this hass the winter in the larval state, completing their transformations as cavity in the spring, and emerging about the end of May. In with tolerably thick bark, they sometimes form their hybernacula

The object, though not the cause, of this difference in instinct cent he beetles emerging in autumn, and those remaining as larvæ spring, is obvious.

The bark, especially when riddled by Scolytus, soon becomes loose the action of the weather during the winter, and, when it falls oirds and numerous enemies quickly remove all exposed larvæ; but e buried in the wood are quite safe, the little circles of frass marktheir openings, when the wood has lost the slight staining it receives the decomposing bark, being hardly visible, though the little thes of white wood frass in the removed bark, are very conspicuous. I do not remember having seen a felled elm trunk that S. destructor not attacked, frequently whilst still trying to throw out shoots; I have never seen a trace of it in healthy growing trees; these are posed to resent and repel the attacks of the Hylesinidx by pouring sap into their burrows; and, in the case of S. pruni, I have obserburrows less than an inch long, some of which, containing a few s already laid, had been abandoned uncompleted by the beetles, parently on account of the presence of a fluid which must have been o, as no rain had fallen to account for it: these burrows had been med in bark that was still nearly healthy, though near some dying rk which had doubtless attracted the beetles.

3. Scolytus multistriatus, Marsh. This also lives in elm, sing usually found in the same logs as S. destructor, though also couring in smaller ones down to four inches in diameter. It is much ore scarce than S. destructor, one of its burrows being found for fifty it the latter insect. The burrows, similarly to those of S. destructor, tart from the bottom of a crevice in the bark; they take a longer

128 (Non)

diagonal course in entering the bark, before assuming the type longitudinal direction, and though usually, do not always, lie clos the wood. Though much smaller in diameter than those of S. destruthey are nearly as long, and I have seen one four inches in length. number of eggs laid in a burrow is about a hundred; they are depos behind a continuous layer of frass, which does not encroach on ei the floor or roof. The period of oviposition is about a week later that of S. destructor. I have several times found a male and a fer beetle in the burrow when it was less than half-an-inch long, and be any eggs had been laid, but never after that period. The larve f their hybernacula in the thickness of the bark, hardly ever in the w S. multistriatus is a much less hardy insect than S. destructor, and o the species of Scolytus I had in captivity last winter, multistriate the only species of which I failed to rear even a single specin Moreover, I have observed that in a state of nature, but a compa tively small proportion arrive at maturity, which to some extent accor for its rarity. I have never observed any indication of autum specimens.

4. Scolytus pruni, Ratz. I have met with this species (usu considered a rare one) in apple and pear trees, and have found its ab doned burrows in apricot. It is said to affect various fruit trees. 'apple tree in which I have found it had been slowly dying, success strips of the bark from top to bottom of the tree had died year at year, and it was in the last strip that S. pruni had burrowed and copleted the death of the tree; I have met with traces of its having m sparingly attacked the previous strips.

Unlike the other species of the genus which make nearly unifor cylindrical burrows (there is often a trace of a diverticulum near entrance of S. destructor's burrow), the first part of the burrow of pruni is a nearly square chamber, as if two burrows had for so far be placed side by side. I have found the male beetle in this cavity in brows little more than begun, and in others nearly two inches long, a have no doubt that it is formed by the male beetle, who eats the reserve material as food: in none of the other species have I found the material in the burrow for more than a very brief period.

The remainder of the burrow is from two to four inches long, as slightly encroaches on the wood. The eggs are covered by a layer fine frass, which usually forms merely a series of detached patches filling the egg cavities to the level of the wall of the gallery. The larm almost invariably bury themselves in the wood for hybernation, and the

Is do not emerge till spring. They are the last of the genus to er, coming out towards the end of June, whilst S. destructor has dout for several weeks. This species is by no means hardy, for age proportion of the broods die; but it is not so delicate as S. instriatus.

5. Scolytus Rugulosus, Ratz. Though hitherto accounted r rare, this species must always be, however, more common than runi, because it is much hardier; whilst S. pruni prefers large ks, not entering wood smaller than three inches in diameter, S. losus burrows in all, even in branches which are mere twigs, and nds abundant pabulum, where the other insect would starve. I never detected S. rugulosus in the living tree, and do not believe either it or S. pruni is injurious to orchards. It comes out about eek before S. pruni, but is later than the other species of the genus. This insect is notable amongst the Hylesinidæ for not hiding the rance of the gallery of oviposition; in a stick infested by it the nings of these may be readily seen, whereas usually they are well den in some crevice of the bark, as for example is the case with S. structor and multistriatus, in neither of which can the opening be tected, except during its formation, and then by the frass lying at entrance. This partly depends on the fruit trees attacked often

wing very smooth bark.

The gallery is longitudinal and rather more than an inch in length, it is lined all round with white frass from the wood, on which the arrow slightly encroaches, and not with frass from the bark, as in the ther species, making the gallery when opened very conspicuous against the dark coloured bark beside it. The eggs are laid on either side, which the frass; their numbers seldom reach 80. When not crowded to be the larve make a tolerably regular "typograph," and burrow not the wood to hybernate, sometimes to a depth of nearly half-an-inch.

When the bark is thick, they sometimes, like S. destructor, hybernate in its thickness.

6 Scolytus intricatus, Ratz. This species, according to my experience, is, after S. destructor, the most common species, and cannot be considered scarce. It seems, also, to be not so closely allied to the other species as they are to each other, having more rounded outline, and less of the typical quaint truncated form. It feeds on oak, and differs from the other species in habit, by making a transverse instead of a longitudinal gallery of oviposition, which, in comparison with the

130 [Novemb

size of the beetle, is also much shorter than theirs, being often or about an inch in length. The eggs are laid along the sides and cover by a layer of frass, which is continuous over the roof of the burner The eggs are fewer than in the other species, seldom exceeding ( and averaging much less. The larval burrows often lie perfectly parallel with the fibres of the wood, for nearly their whole length of about s inches. The larva does not follow the usual instinct of the genus burrowing into the wood to hybernate, but is satisfied with making a tolerably deep depression, so that it is exposed on removing the bar and I observed last winter that the birds did not wait for the weath to remove the bark, but picked it off themselves to secure the dain morsels within. I have only observed it in oak branches broken by the wind (and not in all these), and I have never seen it in felle timber or in growing trees. It is probable that, to suit S. intricate the wood must have been cut (or blown down) for some particular tim and, as the beetle oviposits in the middle of June, only that wood attacked which was separated from the tree at a later period than the at which oak is usually felled. An aberration of instinct of this speci in confinement is worthy of notice. I placed a number of beetles wi some oak sticks, and several of them formed galleries of oviposition but one of them formed the gallery longitudinally as the other speci of the genus do, which it never does naturally, and another assumed habit of still more widely separate species of the Hylesinidæ, by makin its burrow in the solid wood, the eggs and frass were disposed as in the normal burrow, excepting that several eggs were placed beneath the frass of the roof. In no case did I observe both beetles in a burro and, from what I saw, I have no doubt that pairing occurs after the burrow is commenced, but without the male entering it.

In conclusion, I may observe, that in all the species the fema beetle dies in the burrow after oviposition is completed. All the speci have a fashion of placing their foreheads against other individuals ar giving a thrust by pushing forwards the jaws. They employ this pr cess to remove another beetle from a station they desire to occupy it appears, also, to be an expression of anger, sometimes two beetle having an encounter in this way, and they use the same movement recommending themselves to the other sex.

S. destructor, intricatus, and pruni, are able to squeak audibly a rapid movement of the abdomen against the elytra, intricatumaking the loudest sound.

The Scolyti are much infested by parasites, especially by Hymenoptera of the family Ohalcididæ; S. pruni and intricatus lose a large

on of their broods by their attacks, but *S. rugulosus* was, of all ites bred, the most copiously attacked. On removing a piece from a stick containing them, numerous larvæ of the parasites sible, which had devoured the larvæ of the beetles, before they ered their hybernacula in the wood, all those that had escaped asites having done so.

we parasites represented at least half the broods; I bred from alf a dozen species of  $Chalcidid\varpi$ , Cheiropachus quadrum being the most numerous. The greater liability of S. rugulosus to from parasites has probably a close connection with the fact I tready mentioned, that the entrances of its galleries of oviposition ry obvious.

Ir. Rye informs me he often finds Homalota coriaria in the wet ws of S. destructor.

bergavenny, July, 1869.

ON CENTROPTILUM, A NEW GENUS OF THE EPHEMERIDÆ.

BY REV. A. E. EATON, B.A.

A careful comparison of the mouth organs of the nymphs of nearly near British genera of *Ephemeridæ* leads me to modify the plan of ification which I drew up last year, in one or two important partises. The arrangement then proposed by me was based principally a structures of the imago, which seem to serve as a test (not altonor satisfactory) of their affinities to each other.

The most considerable changes that will have to be made are the motion of Canis and Tricorythus to the Leptophlebia group, to which y seem to be closely united by means of the S. American Potamans inanis of Kollar's M.S., Pictet, 1843-5; and the reduction of chlonurus to the Clošon group. Whether Oligoneuria and Lachlania and accompany Canis or not, is a point I am unable to decide upon thout an examination of their preparatory states; and these are at esent unknown. The family seems separable into three principal coups of genera:—(1) those with fossorial nymphs, with the mandible reduced externally into a porrect spine; (2) those with nymphs which away about the river-bed, whose females, when adult, have a ventral entire significant in the produced out of the apex of the penultimate abdominal entire significant in the produced out of the apex of the penultimate abdominal entire significant in the penultimate significant in the

The separation of *Centroptilum* from *Baētis* is a mere alteration in the detail of my former plan, and does not affect the general arrangement.

Genus Centroptilum,\* n. g.
Sp. typ. C. luteolum, Mül.
Syn. Ephemera, p., Mül., 1776.
Cloëon, p., Ste., 1835-6; Cloë, p., Burm., 1839.
Baëtis (Leach), section A. Etn., 1868.

Diagnosis.—Nymph agile, with seven simple pairs of undivided branch plates. Upper maxillary palpus slender, rather long, 4-jointed, with the first in the shortest, the second long and equal in length to the other two taken toget which are sub-equal to each other.

The sub-imago assumes the same posture as Baëtis when reposing.

Imago similar to Cloëon; but with four wings. Hind-wing very narrow, a long costal process, and two simple longitudinal veins.

Distribution.—The Palæarctic and Nearctic regions. Two It pean species are described, one of which (C. luteolum) occurs also in Hudson's Bay Territory. Besides these, there are an English and Carinthian species known to me, undescribed.

Unfortunately I cannot just now lay my hands upon either sp mens of the nymph or preparations of the mouth organs of *C. luteolu* therefore I am unable to speak positively about the structure of labium and lower maxillæ; but, so far as I can recollect, these are m like those of *Baëtis* than of *Cloëon*. The labrum is widely retuse, as *Ephemerella*.

In Cloëon the palpi are two-jointed, with sub-equal joints: upper maxillary palpi are very slender, filiform, and rather longer their maxillæ: the lower maxillary palpi are slightly depressed, a somewhat expanded towards their oblique tips; and their maxillæ: a little longer, but no broader than the divisions of the labium. I labrum is narrowly emarginate.

In Baëtis the palpi are likewise two-jointed, with joints sub-eq to one another: the upper maxillary palpi are slender, of tolerably ev diameter throughout, and not so very long: the lower maxillary pa are depressed and broadly expanded towards their rounded tips, t basal joints being sub-cylindrical and stout; their maxillæ are long and much broader than the somewhat subulate divisions of the labiu. The labrum is narrowly emarginate. Professor Pictet's figure of t labium and lower maxillæ with their palpi (Pict. Ephem., pl. xxxvi, is not accurate.

The mandibles are much alike in all of these three.

Ashbourne, Derbyshire. 15th September, 1869.

<sup>\*</sup> Derivation. - (Gr.) Kentron, a spur, and ptilon, a wing; so named in allusion to the cos process of the hind-wing.

to the List of British Coleoptera.

NDIUM MARITIMUM, Steph.—Frequenting the banks of the rivers and streams pture frequently a Bembidium allied to, but distinct from, B. femoratum. ies, which I will, for the present, speak of as "No. 1," is, on the average, rger than femoratum, and has the head, thorax, and dark portions of the a distinct metallic green colour; while these parts in femoratum are of a brassy colour: No. 1 has, at the least, three joints at the base of the entirely pale, and the bases of the following joints more or less pale; while atum at most the two basal joints are entirely pale, and the base of the more or less so. The antennæ of No. 1 are markedly longer than in um, and the colour of the palpi is much paler. Moreover, in No. 1, the are broader in proportion to their length than in femoratum, and flatter disc; the thorax, also, is a little broader in proportion to its length, and is than in femoratum. In No. 1, the legs are generally entirely pale (but mes the thighs are a little clouded with pitchy in the middle); while in tum the femora are always pitchy. The careful examination of a long series se insects has convinced me that we have here to do with two really distinct, closely allied, and in some respects variable, species.

a his "Illustrations," and in the "Manual of British beetles," Stephens has bed a Bembidium (Peryphus) maritimum, closely allied to femoratum, and by Mr. Rudd on the banks of the Tees; and, though the descriptions in both are characterized by that looseness and want of precision which so greatly tephens' descriptive works, I am of opinion that this P. maritimus of Stephens species I have above alluded to as No. 1; and consider that, in the absence y opposing reason, the Stephensian name should be adopted for this insect. a reason, unfortunately, exists; for there stands in the European catalogue a idium maritimum of Küster; and, although the description of this species is equent to Stephens', yet the inadequacy of the latter author can scarcely ant us in making the change, which the adoption of the name maritimum for species allied to femoratum would render imperative. Schaum, moreover, rms us that Peryphus maritimus is represented in the Stephensian cabinet by examples of B. bruxellense, one of concinnum, and one of littorale!

Duval, in his monograph of this genus, has assigned (it would appear without ficient reason) P. maritimus of Stephens as a synonym to B. concinnum, and is owed in this respect by Harold and Gemminger in their general catalogue. In . Waterhouse's synonymical catalogue, maritimus, Steph., is given under the ad of femoratum (following Dawson).

Duval, when speaking of Bembidium femoratum, alludes to a variety of that ecies, coming from the Pyrenees and from England, which he at one time supsed to be a distinct species, and proposed to name B. puellum, but afterwards pposed he had connected this form satisfactorily with femoratum. The characrs he gives for this variety in some respects agree with the insect I have been riting of above; but in other points they disagree; thus, as no sufficient descripons exists of Duval's puellum, and it is, also, as I say, doubtful whether it can be ssigned to the species under discussion; as Stephen's name of maritimum (likewise loubtfully appertaining to this insect) is not available; and as no other description will apply, it seems to me that I am justified in giving a name to the insect in 134

question. The following diagnosis (to be contrasted with the diagnosis of femoratum in Schaum's Ins. Deutschlands), taken in conjunction with the distinctions from femoratum I have pointed out above, will suffice to characterize it.

B. ANGLICANUM. Viridi-æneum, sub-depressum, antennarum articulis ad minim tribus basalibus, pedibus, palpisque rufo-testaceis, horum articulo penulo infuscato; prothorace sub-cordato, basi sub-lævi; elytris testaceis, fascia medium, margineque viridi-æneis, punctato striatis, striis lateribus et al evanescentibus.

Long. 2-24 liii

Var. femoribus medio infuscatis.

GYRINUS SUFFRIANI, Scriba. This species is allied to G. natator, and is ne equal in size to the smallest varieties of that species, but is readily distinguis by the very different punctuation of the elytra, the punctures of the strike be obsolete towards the apex, but deep and distinct at the base. I have capture single specimens at Dumfries and Horning, and obtained a small series from Desvignes' collection; one of these I sent to Mr. Crotch, who has kindly comps it with specimens of G. Suffriani which he received from Herr Scriba, and finds they agree in every respect.

ALECCHARA LATA. Though, at the present time, this insect appears to considered without doubt a variety of A. fuscipes, it is nevertheless, in my opin a distinct species therefrom, and can be distinguished by positive characters. A. fuscipes the hind-margin of the dorsal plate of the 6th abdominal segment slightly emarginate in both sexes, rather more so in the male than in the fems in A. lata it is completely rounded in both sexes. In fuscipes this same hind-mar is fringed with short ferruginous cilia, while in lata these cilia are black, and long in the male and short in the female. In fuscipes the ventral plate of a segment is rounded at the hind-margin in both sexes; while in lata it is round in the male and emarginate in the female. These characters, in conjunction we the broad form and dark elytra of A. lata, are, I think, quite sufficient to establist claim to a place as a distinct species from O. fuscipes. Gravenhorst descrif A. lata on specimens from N. America; so I am unable to say whether our bis species is really conspecific with the American one; if this should prove to be 1 so, it will be necessary to find another name for the European insect.

ALEOCHARA FUMATA. I have no doubt this insect is only a variety of A. bre pennis, as I have all the intermediate forms, and moreover can find no characte to distinguish the most typical fumata from brevipennis, except size and colour. D. Sharp, Eccles, Thornhill, September, 1869.

A few additions to the Coleopterous Fauna of Lundy Island.—During a sojon of a month at Ilfracombe, I paid two visits to Lundy Island: curiosity alone won have induced me to explore this isolated granite block, but I was extremely desire of ascertaining what Aculeate Hymenoptera were to be found on it in the month August. I read, some years ago, with great interest, Mr. Wollaston's notes on the Coleoptera found there by him in the month of June, 1844, from which it appears that in five days he captured 63 species. It is a fact, alluded to in those notes, the one may start for the island frequently, but that landing on arrival there is a matter.

uncertainty; I was extremely fortunate in being able to do so on both my ons. The first insect that I saw on the island was Bombus hortorum; not a as I might or fancied I might expect every species of the  $\mathit{Apida}_{x}$ , but the le insect, in stature and array, that disports in the meadows of Hampstead ghgate. Everything on the island had, to my eye, a stunted appearance; here are none, but the few bushes that I found had certainly a dwarfed ance; the black-berries, also, being of the smallest dimensions. It is not ention to give any list of the Hymenoptera in the present communication, erely to mention a few species of Coleoptera not contained in Mr. Wollaston's one insect, therein mentioned as being uncommon in Devonshire, but abunndy, viz., Cetonia aurata, I, also, found as late as the month of August; but I

found it in Devonshire. the first coleopterous insect that I found was Ocypus olens; on turning up s in search of ants, this insect was to be found in abundance, yet it does not r in Mr. Wollaston's list; June being, I suppose, the interregnum between pring and autumnal broods.

The following species also do not appear in that list: Nebria brevicollis, found r stones, not uncommonly. Calathus cisteloides, under dried horse droppings. omenus pallipes, under rubbish in an almost dry watercourse. Anchomenus us in company with the former. Pterostichus nigrita and Anisodactylus bino-, under stones. Agabus bipustulatus, under stones in an almost dried up pond. we no doubt that I might have doubled or trebled this list, had I used the ing or sweeping net; but I was not intent on this description of game, and as I have enumerated were taken whilst searching for ants.—F. Smith, 27, amond Crescent, Islington, August, 1869.

On Otiorhynchus fuscipes, Walton.-It is always gratifying to have our own ws with regard to species confirmed by an able authority. I certainly experience on reading Dr. Sharp's observations on Otiorhynchus fuscipes, at p. 107. I er had the pleasure of capturing this insect, but have repeatedly taken O. ebricosus. Dr. Sharp remarks, that, to render Mr. Walton's description of the tinctive specific characters of O. fuscipes perfect, it is only necessary to add, t the longitudinal strize of the last abdominal segment are considerably finer d more closely packed than is the case in O. tenebricosus; this applies, of course, the males only, and is precisely the opinion that I indicated in my remarks at 232, vol. ii, E. M. M. This difference of striation is the characteristic of all the ales that I possess, and which were given to me by Mr. Walton, and captured by m at Portland.

Mr. Rye, in his observations on Dr. Sharp's note, states that he has never been ble to find any males except those exhibiting the sexual character of  $\it O.\,tenebricosus$ ; nat is, those that have the apical segment coarsely striated, although he has xamined many specimens that have passed through Mr. Walton's hands, including hose in the British Museum; unfortunately, amongst these, there are no males; Mr. Waterhouse's specimens I have not seen, so that I fear Mr. Rye has not nitherto seen examples thoroughly examined by Mr. Walton. It certainly appears that Mr. Walton did not detect the difference in the striation in the two species, since he describes the ultimate segment in both the males as "delicately striated." 136 [Nore

With regard to Walton's O. fuscipes being the same species as that so na by Olivier, it may perhaps be impossible to determine, as the sculpture in differently described by different authors; but it is certain that Schönher regarded them; and Germar observed a difference between O. fuscipes, Walt, O. tenebricosus, but he regarded it merely as a variation. The insect which Stierlin regards as identical with Olivier's species appears to be accepted as by continental entomologists, and such perhaps it really is; therefore Walt species must be regarded as unnamed. I will therefore propose a name whith think will be accepted by all who regard the species as distinct; the synon will be as follows:—

Otiorhynchus Waltoni, Smith.

fuscipes, Walt. (nec. Oliv.), Ann. and Mag. Nat. Hist. (1847), vol. xix, p. 445. fagi, Chevr., Schön.

ID.

[The imposition of a new name to Mr. Walton's O. fuscipes seems to me to rather premature. As insects are now proved to be found in Britain that have sexual character of true fuscipes, and as that species is known to vary exceeding in sculpture, it would appear more probable that Walton's insect should be a varied fuscipes than that it should require re-naming as distinct and unrecognism. Moreover, by admitting the identity of this insect with fagi, which is known to a variety of fuscipes, Ol., Mr. Smith does away with the necessity for giving it fresh name. Considering it as distinct from fuscipes, I presume he has careful compared it with the somewhat numerous European species in Stierlin's mo graph closely allied to that insect and to tenebricosus. Under any circumstar I cannot regret that my inability to obtain a sight of Walton's two species, or reconcile either of them with fuscipes, induced me to communicate the note thas originated the interesting observations of Mr. Smith and Dr. Sharp; as it I resulted in the tolerably certain conviction that we really do possess a good specallied to tenebricosus.—E. C. R.]

Captures of Coleoptera.—In the end of August last, I took a single specim of Triplax Lacordairii, Crotch (ruficollis, Lac.), out of a hard dry fungus, no Darenth Wood, Kent (it will be remembered Dr. Power took his specimen Erith). I also beat out of some dead branches a small specimen of Anisox fuscula near the above place, on the same day. I have also taken, in the same ighbourhood, this year, Tropideres niveirostis, Hydnobius strigosus (2), Scolyt intricatus, Hylastes obscurus, Opilus mollis (several), &c.; and, in the Hemiptel Asopus luridus (2), Monanthia simplex, Phygadicus urtice, &c.

In the middle of August last, I also found, near Croydon, Agaricophag cephalotes, Thalycra sericea, Gymnetron rostellum, &c.—G. C. Champion, 274, Wi worth Road, London, S., September, 1869.

Captures of rare Coleoptera.—When at Sherwood, during the last summer, captured about half-a-dozen specimens of Cryptocephalus querceti, by beating oak and I have taken, in this neighbourhood, a single example of Cryptophagi serratus from under birch bark.—J. Kidson Taylor, Thorn Cottage, Lime Grov Longsight, Manchester, October, 1869.

continus brassicæ, Fab., an inquiline, not a gall-maker.—Mr. Rye having kindly cout to me, that, of this awkwardly named beetle, the monographer of the L. Desbrochers des Loges, says,—(Ann. Soc. Ent. Fr., 1868, p. 333) "qu'il ie une galle sur les feuilles du saule (de Heyden)." I beg leave to explain, far as my own observations go, the female pierces with the rostrum fully ad galls of a Nematus on the leaves of Salix fragilis, and deposits therein one eggs. The young larvæ feed voraciously on the substance of the gall, and, y their way to the centre, in many cases stifle by their crowding presence mg saw-fly larva to death; and, of course, if, at this period, the galls are ad, the inquiline is found in full possession of the limited free space within about half-grown, this beetle-larva has a length of about ½", its colour is a h-yellow, the greenish tinge being caused by its full intestines; when full it is about 1½" long, but appears shorter by its usually curved position; en pale yellow, the head fuscous; the body sprinkled with sparse, isolated, ish hairs, placed in more or less regular longitudinal rows.

hen full-fed, the larva drops to the ground, and, burying at once, forms there d, earthy cocoon, containing a coating of yellowish silk.

he pupal state lasts about a fortnight or three weeks, when the beetle forces

y out by breaking the cocoon.

ome of the larvæ, which I kept in captivity, abstained from making a coinstead of which they spun over a slight hollow on the surface of the ground
abrella-shaped silken roof, beneath which they passed their metamorphosis.

roof, about three lines in diameter, possessed in the centre a round spot, so
parent, that the outline of the pupa could be dimly made out. It served as an
door to the perfect insect.—Albert Muller, South Norwood, S.E., 4th

mber, 1869.

On the habits of Cecid myia urtica, Perris.—Having just bred British specimens is midge from the well-known pale green hairy galls on the stems and leaves rtica dioica, I offer the following observations concerning its natural history, h may be considered as an unpretending supplement to the accounts published erris, Bremi, Loew, and Winnertz. Each gall harbours but one white larva, limentary duct of which gives its body a pale greenish hue. A full-fed larva, th I saw on the 22nd August last work its way out of the still closed transe slit of the pouch, was about a line long, rather flattened; the first segment slender, beak-like, the second broader, but only half as broad as the third, fourth to seventh segment each a little broader than the preceding, the eighth broadest, the ninth to twelfth each slightly diminishing in breadth, the thirath considerably narrower, the fourteenth (which is the last), oval, and less n half as broad as the thirteenth, which gives to the latter a truncated appeare. I could not discern any pubescence, but this may be attributed to my lens being powerful enough. This same larva, placed on earth, burrowed without ay about two lines deep, and on the 4th September, I found that it had changed a sculptured pupa (described beneath) without spinning a cocoon, or even only ew threads; nor did its companion, which I left quite unmolested, spin at all. is fact is at variance with Winnertz's account, that this larva turns to pupa in a out (dicht) white silken web (Linnæa, Ent., vol. viii, p. 240). Am I to suppose 138 [Non

that my larvæ abstained from spinning because in the glass jar wherein they kept they found themselves sheltered against any possible inclemency of weather? If so, their spinning is a faculty exercised at will, and not ministrictively.

The pupa was \(\frac{4}{3}\) long, forehead broad, armed on each side with a sprotuberance; behind each eye and located on the thorax, one respiratory, portube; colour of these tubes yellow, their tips fuscous; head fuscous, eyes behining, thorax strongly arched, pale fuscous, polished; wing-cases rounded, reshort, pitch black; feeler and leg-cases pitch black, shining; leg-cases twicklong as the feeler-cases; abdomen dirty-yellow, opaque, its upper surface reand somewhat darker than the rest.

A Coriza flying by night.—When reading, with my window open on acc of the heat, on the 27th August last, about nine p.m., when quite dark, I considerably surprised by a female of Coriza Wollastoni flying to my light, are which it flew as madly as any moth, "flopping" down on the table and riagain so quickly that I had considerable difficulty in capturing it. When between my finger and thumb, it emitted an odour quite similar to that of the bed I but less powerful and persistent, only clinging to my digits for a few minute Thos. Jno. Bold, Long Benton, Newcastle-on-Tyne, September 16th, 186).

Note on the habits of Iassus cruentatus.—My experiences with this pre Homopteron do not lead me to the same conclusions as those to which Mr. B. Co (p. 109) has arrived. Both last summer at Ross-shire, and this year in Inverne shire, I have met with the species rather commonly, and always upon birch or My Gale. Probably it affects other plants, but certainly the yew is not necessary its existence.—F. Buchanan White, Perth, October, 1869.

Parasites on the Pterophori.—Parasites are certainly rare on the larvæ of t group of Lepidoptera; an ichneumon has been, however, figured and described M. Millière, and it has been my misfortune four times to have larvæ so infest Twice the parasitism occurred in the larvæ of brachydactylus, sent to me fr Zurich, as noted in the Entom. Mon. Mag., vol. i, p. 215. The dipteron th recorded as one of the Tachinidæ, has been kindly sent by Mr. McLachlan to I Verrall, and decided by him to be a Scopolia, probably S. oxypterina (Zetterstet Again this spring, two larvæ of tephradactylus were infected, but the evil spin which haunted them were in this case ichneumons. They were regarded by as the sexes of one species, but they have been named by Mr. Marshall, Rog bicolor (Spinola), and Mesochorus pectoralis (Ratzeburg); both larvæ, as in t former case, had only a single tenant each, and, as in the case of the brachydactyl they became stationary just before their time of change, and when dead, seem to consist only of a dried larva skin enclosing the parasite, and in the case brachydactylus its cocoon also.—R. C. R. Joedan, Birmingham, 24th September, 186

oture of rare species of Neuroptera-planipennia. - The following notes of s of Neuroptera may prove of interest.

merobius pini, Steph. I obtained a single specimen of this rare insect from e fir at "Redlands," Leith Hill, Surrey, on the 6th June last.

inconspicuus, McL. I have again met with this species in Addington Park, I captured two examples on the 26th June by beating Pinus sylvestris. secies would appear, therefore, to frequent the Scotch fir as well as furze

See my note on this species in vol. v of this magagine, p. 125.

concinnus, St. At the same time and place as the last-named species, I ed nine specimens of this local insect, all being beaten from Pinus sylvestris. s not appear to continue out long, as a fortnight later I visited the same spot ly obtained one more.

othochrysa capitata, Fab. This summer I have met with this rarity for the ime during the eight years that I have collected the Neuroptera. I took one nen in Addington Park, at the end of June, by beating Scotch fir. When , it has a very glittering appearance.

Thrysopa flavifrons, Brauer. I was staying at Southwold, on the Suffolk coast, gust, and near there I obtained two specimens of this rather scarce species ating oaks. I saw others at the time, but did not take them.

Ohrysopa tenella, Schn.-I have again met with this species. I captured two mens at Hampstead at the end of June, and one specimen at Black Park,

s, on the 26th June. Chrysopa aspersa, Wesmael. Mr. McLachlan says in his "Monograph of the sh Neuroptera-planipennia," that this species frequents woods. I have noticed, ever, that it appears to prefer heath-lands which are planted with firs, and it a habit of flying in the early dusk over the heather. It also, as far as my rience goes, appears about three weeks later than C. rentralis, which species ve always found in June in woods, and generally by beating oaks.—Percy C. RMALD, 35, Bolton Road, St. John's Wood, 13th September, 1869.

The date of publication of Hübner's Works.-Not the least of the difficulties of systematic Entomologist arises from the almost total impossibility of ascertainthe dates of various foreign works originally published in parts, so as to fix the ority of the synonyms of species described or figured in them with any degree certainty. Hübner's works are peculiarly difficult in this respect.

The dates given for Hübner's European Lepidoptera are as follow:

```
. Herrich-Schäffer.
1793 - 1840
1796? — 1835?
                           Staudinger.
1805 - 1824 ...
```

Hagen says that figs. 637-693 of vol. i, were published in 1824, thus implying at the subsequent plates were of later date; but Hübner quotes figs. 639, 640 his own "Verzeichniss" (1816), so that the plates in question must either have en issued previously, or Hübner must have quoted plates that were not published r eight years afterwards. The text was apparently commenced in 1805.

The dates for Hübner's Exot. Lepidoptera are,—

```
Herrich-Schäffer.
1793 - 1840
```

1806 - 1824 ...

```
The dates for Hübner's Zuträge,—

1806 ... ... ... ... ... Herrich-Schäffer.

1818 — 1837 ... ... Hagen.
```

Hübner cites vol. i. of the "Sammlung," in his Verzeichniss; and figs 83 of the "Zuträge." As the Zuträge and vol. ii. of the Ex. Schmett. are different plan to vol. i, it seems that the former was commenced after the contion of vol. i. of the latter. Herrich-Schäffer's date of 1806 is evidently too for the Zutr.; and Hagen's (unless Hübner cites unpublished plates) too Vol. ii. of the Sammlung is evidently subsequent to 1816.

Similar difficulties, but less serious, exist with respect to Esper, Cramer, some other works. Any information respecting the dates of these or similar w would be most acceptable, as without more definite information than I posses present, I cannot fix the synonymy of species described or figured by these and with sufficient precision.—W. F. Kirby, Dublin, August 24th.

[In my copy of Hübner's Sammlung Europäischer Schmetterlinge, which in the possession of the late James Francis Stephens from the year 1840 to death, are some valuable pencil notes as to the dates of Hübner's Plates.

My attention had been called to these more than once by Mr. Stephens in life-time, when we were discussing (as we frequently did) whether in this or tease Hübner or Haworth had priority. Naturally, I have only concerned my with these pencil notes in the 5th volume, but they also occur in the 3rd and 4 In the two first volumes there are none.

```
The notes in vol. iii. are "Pl. 75 before 1805,
                        ,, 150 ,, 1816,
                        " 151 after 1822."
...... vol. iv. are "To plate 74 before 1806,
                              100
                                        1816.
                     From " 101 after 1822."
...... vol. v. are "Pyralis before 1801 to fig. 141,
                      Tortrix
                                   1801
                                          ., 194,
                      Tinea
                                   1801
                                         ,, 258,
                                   1812
                                          " 2.3,
                                   1816
                                             414,
                                   1822
                                              450,
                                   1829
                               22
                                              470,
                             after
                                              477."
```

I believe these calculations were arrived at from reference to other worpublished at such and such dates and noting where the references to Hübner figures stopped.

Nothing is more likely than that an author would refer to his own unpublished. Plates, if they were sufficiently advanced to enable him to do so. As a very goo case in point, I may cite what I am actually doing at the present time. I have two volumes in the printer's hands; vol. xi. of the "Natural History of the Tineina, and the "Tineina of Southern Europe:" each of these contains references to the other and I am quite uncertain which will be first published.—H. T. S., Sept. 11th, 1869.

currence of Lemiodes pulveralis, Hb.; a genus and species of Lepidoptera new vin.—During my stay in the Isle of Wight this season, I was so fortunate as zure a  $\mathcal{Q}$  specimen of this species, in company with Botys flavalis. Two cans have since been taken by my brother, and one by myself, at Folkestone. sect was kindly determined for me by Dr. Knaggs.—E. G. Meek, 4, Old toad, E., 4th October, 1869.

This inconspicuous insect has already had a place in our Lists, on erroneous ce. Stephens, in his "Illustrations" (Haust., vol. 4, p. 55), includes it, king—"My specimens were taken in June, at Darenth Wood, several years Maldon Park, G. Wailes, Esq." But, in his British Museum Catalogue, he these examples to Botys fuscalis. Guenée says (Pyralites, p. 402)—"La 826 de Wood, et peut-être même sa figure 323, pourraient être des individus Cependant Stephens lui-même rapporte la première au Botys fuscalis, et moignage doit être accepté."—EDS.]

Deiopeia pulchella at Folkestone.—On Friday last, October 1st, whilst shooting a hills, at the back of Folkestone, and not far from where I took sacraria in I disturbed and caught a specimen of Deiopeia pulchella. A turnip field, not sual stubble, was the scene of capture. I kicked up the insect out of a strip hite turnip, between a field of swedes on the one side and a slope covered with a herbage on the other; there was, however, a barley stubble at no great mee to windward. A close inspection of the vicinity produced no further ts. When disturbed, the insect only flew a few yards at a time, but would at first allow itself to be boxed, being exceedingly shy. On getting a hat it, however, it most obligingly shammed death, and was speedily boxed. The imen is a male in fair condition, but rather damaged in one hind-wing.

During a stay there of more than two months, I found little else worth cing; Liparis chrysorrhaa was exceedingly abundant in the Warren at the mining of August, my brother and myself finding 62 cocoons (quite empty) on bramble bush. Odontia dentalis has been rather common in the Warren, but I e obtained most of mine by searching the Bugloss for its very conspicuous son. I have seen but few Colias Edusa, and only one Hyale. Sugaring has I pretty well, but then I have scarcely missed a night in the vain hope of cania albipuncta putting in a re-appearance. A few Aplecta occulta came at the of August, and Agrotis puta and A. saucia have been far more abundant than by were last season. Puta has continued from August 2nd until now, and of the ter which came out about September 20th and is just over, I usually had eight nine each night.—Thos. H. Briggs, 6, Old Square, Lincoln's Inn, October, 1869.

Leucania extranea, Heliothis peltigera, and Sterrha sacraria at Neath.—I have not pleasure in recording the capture here by R. Stafford, of a fair female specim of Leucania extranea. He took it on September 15th, about 7.30 p.m., enjoying sweet blossoms of Scabiosa succisa. He also took. on September 3rd, an unually brightly marked example of H. peltigera.

I have been in the North of Argyleshire for two months, and saw many mmon Lepidoptera; the most noteworthy species being, perhaps, Ph. lapidaria: found it amongst Myrica gale.

142 [Novem]

On the three first nights after my return home, viz., October 10th, 11th, a' 12th, Sterrha sacraria paid us a visit. All three were females, and have laid eggibut I am afraid that the lateness of the season will make it a hard matter to rethe young larvæ, as my experience in 1867 showed how susceptible they are to the first frosts.—John T. D. Llewelyn, Ynisygerwn, Neath, 13th October, 1869.

Agrotis saucia, &c., in the New Forest.—I have sugared in one of the enclosure near Lyndhurst, from September 2nd to 9th (omitting Sunday), and again September 21st and 22nd. The weather on all the intervening days was so storn that no sugaring could have been done, had I been here, which fortunately, I w not. Moths have been common as a rule, and Agrotis saucia has appeared eve night in greater or less numbers. The variation among them is extreme, and maexamples are very handsome: the normal saucia is common now, and I dares will continue to be so, if nights are favourable. The other insects I have tak are T. batis (a second brood, of course), C. diluta (abundantly, it was on eve tree), T. fimbria (still out), A. pyramidea (abundant), N. glareosa, A. puta, croceago, and C. nupta, sponsa, and promissa, the two last being, of course, mu damaged and scarce. The later species are just beginning to appear, and on t 21st, H. rhizolitha, A. rufina, lunosa, pistacina and litura, and X. silago were on all for the first time this season; last night again (the 22nd), these were joined one H. petrificata, and I had also the pleasure of boxing a fine specimen of Epun nigra fresh from the pupa .- W. A. LEWIS, (at present at) The Crown, Lyndhur September, 1869.

Charocampa Celerio at Weston-super-Mare.—A very fine specimen of C. Celer was brought to me on September 16th, by a lady, who caught it at rest in h drawing-room.—M. A. Mathew, Weston-super-Mare, September 30th, 1869.

Acronycta alni at Derby.—On the 19th of August, I took a larva of A. aln which spun up the next day in an elm leaf. It was crawling on some railin under wycb-elms. I found one last year on the same road, but it was injured a died.—G. Baker, 47, Kedleston Street, Derby, September, 1869.

Eupithecia fraxinata at Edinburgh —A few larvæ of this rather scarce speciwere beaten out here at the end of August. Some were full-fed, and three belong to the coloured varieties.—Andrew Wilson, 21, Young Street, Edinburgh, 16 September, 1869.

Apleta occulta at Edgware.—In the first week in September, I took a sing specimen of Apleta occulta at sugar in my garden, and since my note of the 15 September (page 114), I have taken three more specimens of Agrotis saucia.

It may be worth noting that of a dozen C. nupta which I have taken at sug this autumn, ten have been upon one particular lime tree, the only side of whit that I can sugar faces the north-west. I have regularly every evening, when have been at home, sugared two large oaks and two limes in my garden, and have taken only one nupta upon one of the oaks, and one upon the other lime tree. The four trees are only a few yards apart, and upon them I have taken this yes and last between sixty and seventy species of Noctuæ.—Arthur Cottam, Stor Grove Cottage, Edgware, October 1st, 1869.

as Edusa near Manchester.—I have seen seven or eight specimens of C. his year in the Bollin valley. I think it has not been noticed there before, illectors to whom I have spoken on the subject seemed to doubt my identifief the species.—J. R. HARDY, 118, Embden Street, Hulme, Manchester, er, 1869.

to on the larva of Peronea rufana, W. V. (autumnana, Hüb.).—As the larva of cies seems little known, I may state that in the autumn of last year, I ro specimens of the var. bistriana, from larvæ taken on white poplar, in ald, between one and two miles from the Wimbledon Common locality.—

JONGSTAFF, Southfields, Wandsworth, S.W., October 9th, 1869.

te on a food-plant of Eupithecia albipuncta.—I have found the larva of this upon Lythrum salicaria in Coombe Wood. I do not remember noticing this as one of the food-plants of this species.—ID.

escription of the larva of Nephopteryx angustella.—On September 30th, 1868, achin kindly sent me two larva of this species feeding on the fruit of mus europæus, and from them I have drawn up the following description:—he full-grown larva is five-eighths of an inch in length, cylindrical, and ately plump, the two hinder segments rapidly tapering almost to a point, seend tapering a little to the head, which is small and flattened; the segulations rather deeply defined.

the ground colour of the body and legs is a flesh tint, having the slightest bion of yellowish-green in it; on the upper surface there are five longitudinal of dull red-brown markings, extending on each segment from its commence-to about two-thirds of its length backwards, and leaving the remaining third e segment in appearance like a pale band; on each segment from two to n, the markings are to be seen as follows: the dorsal commencing broad, nes narrower, and finishes behind in a fine point; the sub-dorsal markings, on contrary, commence with the point of a wedge shape, growing irregularly represented near their base by transverse lines of the ground ar; on the 12th segment these sub-dorsal marks unite behind, and on the 13th larker in colour; below the sub-dorsal series comes another, very similar in e, but arranged with the broad part at the beginning, and of the same colour. head is dark brown, and there is a broad brown plate on the 2nd segment with ack oval spot on each side of it behind.

The tubercular dots are not conspicuous, being of the same colour as the vn markings in which they are placed; but each of them is furnished with a ute flesh-coloured hair. The spiracles are exceedingly small, of a pale purplishwn, invisible without a lens.

The larvæ spun up within rotten wood, and the perfect insects appeared on y 18th and 26th, 1869.—WM. BUCKLER, Emsworth, October, 1869.

Note on the food of the larve of Scoparia and Crambus.—Mr. Gregson's remarks de p. 116) remind me that I intended giving the readers of the Magazine some tts on the finding and rearing of these larve—to the end more especially that

144 [Novem

Mr. Buckler's gallery of larva-portraits might be benefited. My experience is small, that I trust Mr. Gregson will kindly tell us his modus operandi in findi and rearing these larvæ. It is probable that all (or nearly all) mosses are eaten the larvæ indifferently, for I have found some of the species he mentions feeding on different mosses from those he names, e.g., S. muralis on Hypnum cupressiform Dicranum scoparium, &c., Crambus falsellus on Tortula (Syntrichia) intermedia and auralis, S. truncicolalis on Dicranum scoparium, &c. &c. I have not found any lar feeding on the Hepaticæ (Jungermanniæ), or on lichens. The time for looking of course spring and early summer, and the localities that I have found me productive are shady rocks, large boulders and walls, especially on the north sid as most mosses grow there, To find the larvæ, peel off the moss and examine t under-side of it. If larvæ be there, the galleries of silk slightly spun up the moss and the frass will indicate their presence. To rear them, I find the be plan is to place the tufts of moss in a jam-pot with ground top, and cover with piece of glass-the moss will not require moistening. The perfect insects w appear at intervals during the summer. Probably, if the larvæ are young, son fresh moss should occasionally be put into the jam-pot. Another Cryptogam phagous larva, not often seen, is that of Nudaria mundana. To find the note some wall of loose stones (a "dry stone dyke") where the imago abundant, and in May lift the upper stones and examine their under-sides. T larvæ will be found feeding on a green confervoid growth that covers the stones. F. BUCHANAN WHITE, Perth, October, 1869.

Captures at Yarmouth, with notes on the earlier stages of Crambus fascelinellus. Some time last June, my young friend, Mr. Geo. Hunt, went over to Yarmouth a days' collecting, but, the weather being cold and windy, could get very litt except Eubolia lineolata. He, however, chanced to notice that the wind in blowin away the loose sand had exposed several cocoons, and by disturbing the sand h found a few more. Of these he kindly brought several to me, but, supposing the belonged to some common Noctua, I took no steps to obtain more, till on July 13tl I was startled by the appearance of a lovely Crambus, which, though new to me could be no other than fascelinellus (pedriolellus).

Being unable sooner to leave home, I went on the 19th to Yarmouth, an after searching for some hours with very little success, at last found the cocoon in comparative plenty, and collected a considerable number.

These sandhills (locally called Denes) are the most barren that I have eve seen; there is very little even of the Marram or bent (Anmophila arenaria), an what there is is stunted. Ononis spinosa in patches, Galium verum, Convolvulu soldanella, and a curious square looking succulent plant, with a berry-like capsul at the top, are the most conspicuous plants, and in those places in which the same is too loose even for these, scattered blades of Triticum junceum only are to be found

This grass appears to be the food af fascelinellus, and from observations mad while searching for the cocoons, I gather that the larva lives under the surface of the sand in a silken tube of considerable size, that it feeds especially on the central shoot of the grass gnawing it down to the root, and that this dry pabulum suffers little apparent change in passing through its system, since the hinder par of the tube is generally stuffed with frass closely resembling bitten up morsels of grass.

nen full-fed, the larva spins a long cocoon in a perpendicular position in the nd attached at right angles to the tube, the upper end being, I believe, the surface; but this is a condition liable to constant alteration from the of the wind.

this occasion (July 19th), I found a few of the moths on the sand, and emerged from the cocoons before I got home.

In days afterwards, as they did not emerge by any means as freely as I had I went to Yarmouth again, and found a few cocoons still containing pupe, large number of the moths sitting on the bare sand, generally at the bottom of mark or other slight depression which would shelter them from the wind a specimen was to be seen on a grass blade, and to this habit of sitting on re sand under the direct rays of the sun, I attribute their almost invariably appearance.

o capture them it was only necessary to carefully examine the sand, and box when found; no net was necessary, as they very seldom attempted to fly. sluggish moths I have seldom seen, and it is not to be wondered at that the s remains excessively local. It seems to continue out a long time, as I took timen as late as August 20th.

on my first and second visits I also found a few cocoons of Agrotis cursoria, not and egg-shaped, and the little stumpy ones of Anerastia lotella, and of the species the perfect insects were very common. Among them were two or lovely varieties: one, very rare, dark grey with a broad whitish costal c, another bright reddish with a similar streak, and a third reddish with sh white veins.

Except a specimen of Gelechia distinctella, nothing else of moment occurred ese two visits, but, on August 20th, the Agrotes being out, I obtained the most y varieties I ever saw of cursoria and tritici, both of which were very abundant; wand aquilina also occurred but rarely; Crambus latistrius, which one generally distes with extensive heaths, was not scarce; and the lazy little Eubolia lineolata brood) was constantly to be seen flying a few yards, and then lying on its side he sand with its wings up, feigning death.—Charles G. Barrett, Norwich, October, 1869.

Cymatophora ocularis, Xylomyges conspicillaris, §c., near Worcester.—Of five the of Cymatophora ocularis I obtained last autumn, two attained the perfect to on the 25th of May, proving to be male and female, and paired about 10 p.m. he same day; by 7 o'clock next morning they had separated. During the tot of the 25th the female deposited ten eggs, on that of the 25th ten more, and real more on that of the 30th. She was quite lively for nearly a week after, but no more eggs. I fed her on sugar moistened with wine. The larvæ hatched during the 8th, 9th, and 10th of June, coming forth by day and night indiffery. Half of them have since died, the others are doing well. I have forwarded or three to a gentleman who will, if all be well, in due time give an account of m. The eggs were rather large in proportion to the moth, somewhat flattened, olour bluish-white; they were deposited on the upper-side of the leaves of lar (a twig of which I enclosed with the moth), near the edge, towards the iole.

It may be worth while to mention that I dug a pupa in the autumn while to a strong resemblance to that of Axylia putris, but appeared a trifle larger: as moth emerged from it I examined it one day this week, and, finding it dead, stripp off the skin from the wings and thorax, when I could plainly see it was Xylomy conspicillaris. The pupa of the latter insect has been said to resemble that of Tamiocampa. My object in these remarks is to point out its likeness to that A. putris.

In May I bred two or three each of Nepticula catharticella and Tischeria a gusticolella from larvæ collected near here in the autumn.—J. E. FLETCHER, We cester, 2nd July, 1869.

Captures of Lepidoptera at Glanvilles Wootton.—The following is a list of sor of my best captures this season:—Exapate gelatella (January 7th), M. alternat L. Servillana, Stigmonota internana (bred from oak-apple\*), Pericallia syringan Leucania straminea, Homæosoma nimbella, Aplota palpella, Ephyra orbicularia. also found Arge Galathea (not seen here since 1836), L. Argiolus (not since 184 and P. falcula (not since 1836), species which used formerly to be common. C. W. Dale, Glanvilles Wootton, Dorset, September 15th, 1869.

Sesia tipuliformis in New Zealand.—Last summer I had brought to me t fragments of a moth found on the window inside a house at Christchurch, a upon examination, found it was one of the "clear-wings," and such parts as mained had very much the appearance of Sesia tipuliformis. I set to work examine the currant bushes, and at length found some with larvee mining t stems; from these I bred beautiful specimens precisely similar to tipuliformis. have not the least doubt the moth has been introduced here with imported currabushes.—R. W. Fereday, Christchurch, New Zealand, August 5th, 1869.

Notes on Butterflies found near Paris.—Returning to Paris after having resid many years in England—particularly in Liverpool, where I first began to collect I fancy that my three months' experience in entomologizing in the neighbourho of the French metropolis might perhaps interest some of your readers, and I hat therefore pleasure in forwarding you some of my notes; my list would, no doul have been more extensive and interesting had I more leisure to devote to collectin but I have but little of that needful; added to this, the weather has been mounseasonable here, and everyone complains of the paucity of insects.

My business place and residence being in the S.E. of the city, I have conquently confined myself to working the country in that direction, particularly sandy tract encircled by a bow of the river Marne, and called La Varenne a Maur, not far from Vincennes; it is well timbered, but the trees (principally oak are mostly young.

In the same direction, but across the river, lie two large woods of Villiers as Notre Dame, which I found very productive.

I visited several times that once notorious abode of robbers, the forest Bondy; it was at one time a famous entomological locality, but it is now being c up into lots and being built upon, so that it is not so good a place as it was.

The following is merely a list of the species which I have captured or semyself.

<sup>\*</sup> Is Mr. Dale sure of this food-plant? The insect usually feeds on Ulex .- EDS.

Podalirius and P. Machaon. Several in May, had some larvæ of the latter

sinapis. Common; the spring broad differs from the summer broad in the f the apical dark spot, just as in England. The var. diniensis is only the of the summer brood.

cratægi. Bred a fine 🎗 from a pupa found attached underneath a currant t resembles somewhat that of brassica, but it is larger and not so angular.

assicæ, rapæ, napi, cardamines, and rhamni, all abundant.

gynnis Paphia, common; the var. Valezina occurs here, but not commonly. Adippe, Aglaia, Selene and Euphrosyne, all common.

Dia. Common in May, a second broad in August, but this year I found a out early in July. A pretty species.

elitxa Artemis. Common, not differing from the English southern type.

elsh specimens are much admired here. . Athalia. Common; the insect is more distinctly marked and darker in than in England; the band below the white one, in the middle of the underf the hind-wing is always filled up with dark fulvous, which I find is not

y the case in English specimens. 1. Dictynna. This once reputed British species is common here, and is found Athalia, but I confounded it with that insect and only took three, which at the I thought were merely dark specimens of the allied species. Having given ark Athalia to a friend in Liverpool, I cannot establish a comparison, but I not be surprised to learn some day that Dictynna has been confounded with in in collections, and that it is once more re-integrated into the English list. darker than the typical Athalia, particularly on the hind-wings, the fulvous a forming the bands being very minute. The characteristic markings, however, on the under-side of the hind-wing. The central pale band is narrower and distinct than in Athalia; in the centre of the fulvous band there is a distinct k waved line (not a merely indicated one as in the other species) and a row of Il black dots below it. The hind margin is pale fulvous, and not straw-colored fringe is distinctly chequered. The larva feeds on Veronica agrestis.

M. Cinxia, which has such a restricted range in England, is common everywhere e, but more especially at La Varenne, where the larvæ are found abundantly in

dry fields about their food plant, Plantago lanceolata.

Vanessa Atalanta. Common, hybernated.

V. Io and urtice. Larvæ abundant; the larvæ of urtice are much paler than

se I noticed in England, being of a bright yellow color.

V. Antiopa. One hybernated specimen. This is swift on the wing, and I have on recommended to smear some honey on the trunks of birches, as in that way my may be taken. I hope it may prove so. It is not a common species in the ighbourhood of Paris, the best locality being the forest of Fontainebleau.

 $V.\ polychloros.$  The larvæ are common on elm, &c., everywhere, and the pupe n be found under the copings of walls, attached by the tail. The greater portion them, however, are attacked by parasites, for out of two or three dozen pupe  $\boldsymbol{I}$ tained, only five were sound. They have four gilded spots in front. The perfect sect is strong on the wing, but frequently rests on the trunks of trees in clearings.

V. C-Album has similar habits to the preceding, and is common.

Apatura Iris. Went too late after it, and saw only a few faded ones. Caught fine var. called Beroe. It has only the two apical white spots, all the other white parkings being absent, and is very rare here.

A. Ilia. Saw several. Generally a common insect, together with its var. Clytic.

Ias similar habits to Iris, but is less restricted to woods.

L. Sybilla. Common in all the woods.

L. Camilla. I cannot understand how any one could have confounded this the allied species. It is abundantly distinct, differing in being smaller, h more acute wings, and in being bluish-black, with a marginal row of bluish The white band is different, and it has a conspicuous white spot in the discell. The under-side differs also considerably. It flies with Sybilla, but is common. I only got one at Bondy.

A. Galathea, S. Tithonus, Megæra, Ægeria, Hyperanthus, Janira, and C.

philus, abundant.

I caught a queer variety of Janira; it has two large white triangular bloom in the centre of the wings on the right side.

Satyrus Mæra, which very much resembles Mægera, has similar habits. I a specimen from a pupa which I found suspended by the tail to a projecting of a wall. This pupa was light green, round, with two rows of raised yellow in front. There are two broods.

Satyrus Dejanira. This fine species is not common; I only took a pair at Bo Cononympha Hero and Arcanius. Both common, but Hero is very local, f in damp places in woods.

Thecla Lynceus (Ilicis, Hb.). Common at Bondy in June, but I took on few, as it resembles pruni very much. The males are out first. This species becomes wasted.

T. quercûs and rubi. Several.

P. Phlæas. Abundant.

P. Dorilis. One in May; should be common. "Blues," except Alexis, scarce. Took only solitary specimens of Alsus, Adonis and Acis, and a few Argio

N. Lucina. Several.

Alveolus, sylvanus, linea, and Paniscus. All common.

I have enumerated 55 species, but about a hundred are found in the neighbor hood of Paris (although some of the localities are at a considerable distance; instance, Fontainebleau is 45 miles from the capital), out of about 240 of which French Diurni list is composed. The district is poor in the Satyridæ (the Eret of course, being totally wanting) and Lycanida.

I seize this opportunity to apologise to those esteemed friends with wh I corresponded whilst in England, for not writing to them, and I am sure they excuse me as I have been so very busy of late. I shall be very glad to hear fr those who care to correspond with me now in Paris. - E. L. RAGONOT, 33, Rue Buffon, Paris.

The sexes of Papilio Merope.-I have much pleasure in making known t following important evidence received this afternoon from the lips of Herbert Usher, Esq., Administrator of the Gold Coast, and which perfectly bears out M Trimen's views respecting the sexes of Papilio Merope.

Mr. Usher was collecting Lepidoptera at Lagos, in the year 1862, and was one occasion much surprised to perceive two very distinct looking butterflies copulá, the one pale yellow, black bordered, and with long tails, the other blac and white, without tails (the latter form, which he took for Danais Nicarius, 1 considered very abundant); this pair was presented to Mr. Freeman, late Govern of Lagos, who noted them as sexes in his collection: the fact that they were place together in the British Museum collection, recalled the occurrence to Mr. Usher memory.—A. G. Butler, 17, Oxford Road, Ealing, 22nd September, 1869.

149 1869

NOTICE OF THE SKANDINAVIENS FJADERMOTT OF H. D. J. WALLENGREN.

BY R. C. R. JORDAN, M.D. (Concluded from page 125.)

HORUS (Geoffroy).

ennæ rather long, those of the male finely serrated, of the female very tly ciliated, with the basal joint thickened. Forehead obtuse, the feathers no cone. Palpi shorter than the head, slender, rounded, somewhat asceninted, with the joints not distinguishable. The tibiæ all slender, not d. First pair of spines in the posterior tibiæ very unequal, the inner ry long, being more than double the length of the exterior one. Anterior left to one-third of their length, the posterior angle in the anterior segment ; in the posterior segment not very distinct. The segments of the posterior lender, the posterior segment without black scales in its very long fringes. terior margin of the anterior wings deflexed, the posterior margin not , with the whole posterior segment both deflexed and turned in so as to form nel, in which the posterior wings are received, when the insect is at rest. of the anterior wings nine, of uniform thickness; the 1st from the base, in the very margin, the 2nd joined at the base with the common lower of the veins, the 3rd from the posterior margin of the cell, and as well as h, which is two-branched, arises from the posterior angle of the cell, g into the inferior segment, the 5th to the 7th are simple, and arise almost the same place (the anterior angle of the cell), running into the anterior nt, the 8th arises from the anterior margin of the cell, and the 9th from the The veins of the posterior wings are five; the 1st, two-branched, arising the anterior angle of the cell, and running into the first segment, the 2nd and oth simple, the 2nd arising from the posterior angle, and the 3rd from the cior margin of the cell, and ending in the 2nd segment, the 4th and 5th e, springing from the base, and ending in the 3rd segment. The cell of the ior wings almost open, the transverse veinlet very slender, not distinguishable. cell of the posterior wings closed by a spurious transverse veinlet.

Of this genus, Sweden and England alike possess only one species, well-known pterodactylus. Wallengren believes this to be the odactylus of Linné, and hence calls it Pterophorus monodactylus. two well-known varieties, in one of which the upper wings are t cinnamon-brown; and in the other, a light greyish-white, more ess tinged with reddish, seem to be both described.

## LEIOPTILUS (Wallengren).

Antennæ of middle length, those of the male at least very finely ciliated, with basal joint slightly thickened. Forehead obtuse, the feathers forming no cone. pi either shorter or very slightly longer than the head, slender, pointed, a little nded, sometimes bending downwards at the last joint. Tibia all slender, not ckened. Spines of the posterior tibic almost equal. Anterior wings cleft to the rd part of their length, no posterior angle to the upper segment, and that of the ver segments also wanting, or else most indistinctly marked. Segments of the sterior wings slender, with fringes of moderate length, the 3rd segment without y black scales in the fringe. Anterior wings almost flat, posterior margin not othed, deflexed, so as to euclese the inferior wings when at rest, as in the preceng genus.

150

The Swedish species of this genus are L. scarodactylus, L. te dactylus, L. microdactylus, L. osteodactylus, and L. brachydactylus. own British species are also five, namely, L. Lienigianus, L. te dactylus, L. microdactylus, L. osteodactylus, and L. brachydac There is no reason why scarodactylus, the larva of which feeds on blossoms of Hieracium umbellatum and H. boreale in August September, should not be met with in our country. The moth appin July. It is larger than microdactylus, nearly equal to osteodactin size, but not so yellow; the spots are browner than in microdact and the lower one is not exactly at the fissure, but rather below the most striking difference, however, is in the dark grey fringe in upper wings of scarodactylus, contrasted with the pale brown fring in microdactylus.

## 9. Aciptilus (Hübner).

Antennæ finely ciliated, with the basal joint thickened. Forehead obtuse feathers forming no conical eminence. Palpi rather shorter than the head, sler pointed, the last joint bending downwards. All the tibiæ slender, and not thicke the spines of the posterior tibiæ unequal. Anterior wings cleft almost to middle of their length, the segments of all the wings slender, linear, and evide without angles. Inner margin not toothed, the 3rd segment of the posterior without black scales in the fringe. Anterior wings flat, with the margins of very slightly deflexed. Veins of the anterior wings five in number, simple; 1st to the 3rd arising from the base and running to the posterior segment, the and 5th also springing from the base and going to the anterior segment. The 2nd and 5th veins more slender than the others. The veins of the posterior with are four; the 1st from the base into the first segment, the 2nd from the base in the middle segment, and the 3rd and 4th from the base into the third segme The 3rd and 4th veins are more slender; the 2nd sometimes sends off a very for branch towards the first fissure. Cells of the wings, none.

The Scandinavian species of this genus are only two, name Aciptilus tetradactylus and A. pentadactylus. The larva of tetradactylis is said to feed on Thymus serpyllum, in May and June. In Britai we fortunately have several more of this genus, viz., A. galactodactylus A. spilodactylus, A. baliodactylus, A. tetradactylus, and A. pentadactylus Paludum certainly does not belong to it, the much longer palpi and the slightly thickened tibiæ would be quite enough to distinguish in The only insect known to me in this group as likely to pass in our cabinets undetected is xanthodactylus, which might be overlooked as variety of baliodactylus. It may be known by its having a spot on the inner margin of the anterior wing, opposite the one on the outer margin, as well as a spot at the fissure.

Food-plant.

re is much in this excellent monograph which would well rether notice, and I leave it in hopes that some one conversant Swedish language will take it up, and that the restoration of Linnean names will be investigated by some one who has the discovering the truth at his disposal.

f discovering the truth at his disposal.

controlled following list of our native plume moths, with the food-plants on me, may be useful, at all events, to the young entomologist; the noticed that none feed on trees, the rose and the bramble are

rest approaches to them :-

		Food-plant.
EROPHORIDÆ.	(II " b )	Bramble and raspberry.
orys festaliella	(Huoner)	Statice limonium.
s Bennettii (Cu	rtis) Cat	Statice limonium.
lophorus rhodod	actylus (Vienna Cat	Tanacetum vulgare.
tilus dichrodact	ylus (Munig)	Achillæa ptarmica.
Bertramı	(Rossier)	Senecio. sp.
isodactylu	s (Zeiler)	Tussilago farfara.
gonodacty	ltii (Zel.)	Senecio, sp.
Zettersted	Tit (Zei.)	Ononis arvensis, &c.
ptilus acanthoae	uciyius (Huonei)	
cosmodaci	yous (11 aoner)	Andryala sinuata.
pilosellæ (Z	deller)	Teucrium scorodonia.
teucrn (GI	reening)	Hieracium pilosella.
obscurus (Z	Lug (Hühnar)	Ononis arvensis.
1.7	mun (Zeller)	Scaviosa ai vensio.
eseoptiius seroii	Jactulus (Duponche	l) Erythræa centaurium.
77. 3.	himanni (Greggon)	unknown to me.
	Jactulas (Fischer)	Scaviosa common in
,, plagio	(Potzeburg)	Veronica chamædrys.
. 7 . 7:47.	Anatular (Treitsch)	ke) Inula conyza, &c.
2	otalas (Linnells ?)	Convolvations stream,
. Timinium	us (Zoller)	Attentista marte
, 7 7	J.J. (Hijhner)	Bottando on dian
	tulue (Hühner)	Eupator tum cannaostant.
toodast	· lue (Zoller)	Solidago virganica.
baaabada	ctulus (Treitschke).	Lactuca marano.
74	votadyo (Hühner)	Arctium uippa.
:1-1-0+	when (Curtis)	Marruotum vargare.
1 -7: adapt	ulue (Zoller)	ulikhowh to mo.
1.1	tulua (Linnaus)	Inymus sorpy want.
n antadaa	tulue (Linnæus)	
, pentuauc	(Zeller)	unknown to me.
genus, paradam	(Bonoz)	

152

A few words in conclusion, even at the expense of seeming pro What is the true position of the PTEROPHORIDE? We British e mologists are apt to take the position of groups for granted, an create imaginary links of exotic species to fill up any gap how wide; the leap, therefore, from the Nepticulidæ to the Pteropher has, for this reason, passed unquestioned, yet surely no one could re believe this to be a true sequence in classification. In the list ab Chrysocorys is classed amongst the plumes, and if this be its true tion (and for such opinion I have the high authority of Mr. Stair to back me), it is certainly a strong connecting link to the Tineina, my own views of the affinities of the Pterophori would be, in spite this, that they were rather an aberrant group of the Pyralidæ than the Tineina (that is, taking the term Pyralida in its widest mean and of these, that the genus Chilo was their nearest ally: but ther so much that is anomalous in the whole group that this is said rat with the view of opening a difficult question than of giving a position opinion. Heterodox as it must appear, I have often dared to the that there was something essentially wrong in our classification of Lepidoptera; as a large group they stand between Trichoptera on one hand, and either Diptera or Hymenoptera on the other. With Trichoptera we have at least two true points of connection, name through the Psychida, and again through Cataclysta and Acentrop on the other side the relationship is more doubtful; yet to me, consid ing that the mandibulate mouth exists in the embryonic or larval st of the Lepidoptera, and considering further how nearly the larva of t Tenthredinidæ approach to those of Lepidoptera, the connection see more close between that group and the Hymenoptera, than the Dipte If this be so, the Sesiidæ, though confessedly one of the most mime groups among the Lepidoptera, have a true homological resemblan rather than a mere mimetic analogy with Hymenoptera, and it wou follow almost as a corollary that instead of beginning with Ornithopter Teinopalpus, and Papilio, we should commence with Trochilium, as instead of finishing with the Pterophori, we should end our lists wi the Psychidæ or Acentropus. But the reader must remember that must lay the burden of this heresy on my back, and not on that of the author, whose monograph has been just brought before his notice.

## E ŒCONOMY OF THE CHRYSIDES PARASITIC ON ODYNERUS SPINIPES.

## BY T. ALGERNON CHAPMAN, M.D.

e species of the genus Chrysis are, so far as is known, parasitic s and bees; those which are attached (apparently, exclusively) nerus spinipes being C. neglecta and bidentata, which are common er O. spinipes abounds. C. ignita, the most abundant species of us, appears to lay her eggs in the nests of almost any kind of which she can obtain access, and occasionally visits those of ipes, but is abundant in the nests of Odynerus parietum. has also been recorded (by Mr. F. Smith) as attached to O. ; but I have never met with it, and suspect that it is the parasite of some other and rarer species of Odynerus, and that urrence with O. spinipes is accidental, in the same sense as that gnita may be said to be so. I may remark, that I was quite pared to find C. ignita so rare as a parasite of O. spinipes; as, often to be seen about the burrows of that insect nearly as fully as C. neglecta or bidentata, out of more than a hundred is cocoons collected last winter, I found only one of O. ignita; as summer I have seen only three of its cocoons in the cells of nipes. The destruction caused by Chrysides amongst the young of O. spinipes, roughly measured by the cocoons collected last r, is in the proportion of one to three of those of the wasp; the ortion of C. neglecta to C. bidentata being as three to two. On July 17th, I observed a nest of O. parietum with one cell open

containing a nearly complete supply of Lepidopterous larvæ. A sis ignita, flying about, settled beside the cell; and, after a brief ination with her antennæ, wheeled round, and, introducing her men into the cell, rested for about twenty seconds, doubtless in act of oviposition. I now regret that I did not then examine the ents of the cell, in order to ascertain the fate of the egg of O. with the usual earthen pellets. Two days afterwards, I examined cell, when I found a larva of C. ignita a quarter of an inch long, other with the Lepidopterous larvæ stored by the wasp, but there no trace of either egg or larva of the latter. On the 23rd, six is from the date of oviposition, the Chrysis larva had eaten all the ce, and was full-fed. I obtained evidence, by finding the exuviæ, of having cast its skin three times, whilst under observation; and, in the analogy of C. bidentata, I believe it had done so four times

154

altogether. The stored larvæ had all been eaten, their heads a remaining, just as when eaten by the wasp grub. The larva then a cocoon, which I know to be typical of *C. ignita*. This was the occasion on which I had a feeding larva of *C. ignita*, and the rap with which it fed up astonished me. None of my *C. neglecta* or be tata fed up so rapidly; but the warm sunny wall on which *O. para* had built her nest may partly account for this, my larvæ of the other two species having been kept comparatively cool.

C. neglecta begins to emerge from the pupa state at the same as O. spinipes, namely, about the middle of May; and, by the week in June, all of both species have emerged. On examining bank colonised by O. spinipes at this period, the cocoons of the prev year are found empty; but, if the day be dull, C. neglecta will ofter found hiding away in the empty cocoons of O. spinipes, and usual pair together. When the sun is out, O. spinipes is busy construct her canals and granular tubes, and C. neglecta is actively running flying about the burrows. C. bidentata, however, is not to be se and, on closer examination, it will be found that of this parasite cocoon of the previous year still contains the perfect insect, which d not emerge until the last of the spinipes brood are coming out, near three weeks later than C. neglecta. I have not seen the egg of t latter, and do not know how or where it is laid; but it supplants the of O. spinipes, as, a few days after the mother wasp has closed her or stored with green grubs, it contains a young larva of C. neglecta bus eating that store, and no trace remains of the egg or larva of t Odynerus. Early in July, the larvæ of O. spinipes and C. neglecta : to be found full-fed, and spinning their cocoons. As the season a vances, the later stored cells appear to escape the attack of C. neglecti for, in the middle of July, whilst O. spinipes is still busy in storing there are comparatively few specimens of C. neglecta to be seen. the other hand, C. bidentata is now abundant, though its oviposition has hardly begun. Towards the end of July, O. spinipes and C. ne lecta are represented only by odd specimens, which have survived the mass of their brethren, though C. bidentata is still to be found some what plentifully.

C. bidentata, when about to deposit her eggs, searches for a fulgrown larva of O. spinipes, at, or immediately after, the period of spinning. O. spinipes, in the completion of her burrow, fills up th mouth with clay long before the most accessible cells can contain full grown larvæ; but it happens, that, in a large proportion of case half), the wasp meets with some accident, and her burrow uncompleted, the cell last constructed being thus only proby the wall of clay that was to serve as a party wall between it succeeding one, had the wasp lived to complete her work. Such protected cells are those chosen by C. bidentata for her ovin. I once found satisfactory evidence of C. bidentata having red through half-an-inch of the clay stopping placed by the wasp ne of these cells. The parasite was in the burrow, covered with st brought down into it by her excavation to form an entrance,age too small for the wasp to enter, but just large enough for f; and in the cell thus reached by her were to be seen her eggs y deposited. On another occasion, a C. bidentata alighted on a I was examining, and where I had partially exposed some cocoons spinipes; she commenced to carefully investigate them with her mæ, and now and then to scratch away some earth partly covering ; she did not, however, deposit any egg, possibly because the tes of the cocoons were not in proper condition.

When a cocoon contains eggs of C. bidentata, there is often to be d, at its upper end, a minute aperture, through which the ovitor of the Chrysis has been thrust; at other times, this, aperture anting, simply, I believe, because the larva of O. spinipes had not e spinning her cocoon when the Chrysis deposited her eggs within There is nearly always a small spot outside on the yellow silken of the cocoon, as if the Chrysis had attacked it first with her s; and those containing C. bidentata may be selected by this mark n a number of cocoons of the Odynerus. One of the most remarke points of their history is, that C. bidentata does not deposit one gouly in the cocoon of the Odynerus, but actually drops in from six ten eggs. These do not appear to be placed in any particular posin, but simply fall on the enclosed larva; and the excess in number by obviate the destruction caused by the latter, especially when its ovements are still active, before the completion of its spinning operaons. In the instance above noted, where I found C. bidentata in the arrow of O. spinipes, the cocoon of the latter contained five eggs in ood condition. The wasp larva had ceased to spin, but had not yet rrunk to those smaller dimensions which it rapidly assumes soon after hat period. In various other instances, I found two healthy eggs of J. bidentata, but often only one, the shrivelled cases of from four to ight others being found with the healthy eggs. I never found any evidence of the hatching of two eggs of C. bidentata in the same cell; 156 [Dece

which, though it seems a likely, would certainly be an awkward, or ence. *C. bidentata* remains longer than *C. ignita* in the egg-state, a number reared by me from the egg, most were hatched two dafter they were collected, but one remained for three days, and and did not hatch until the fifth day, and from the time of hatching larvæ were eleven days in becoming full-fed. The eggs of *C. biden* are 1.5 millimetres in length, white, cylindrical, and very sligit arched; those of *O. spinipes* are larger, 2.5 millimetres in length, yell in colour, and more arched. I failed to detect the egg of *C. negle* principally, I believe, because the interval between its being deposit and hatching is so short, and also because I did not quite know what to look for it. It probably resembles that of *C. bidentata*, and is to found at the time the cell is closed up by *O. spinipes*, and for or a few hours afterwards; but of this I was not aware at the prosession.

The young larva of *C. bidentata* seizes that of *O. spinipes* with jaws, pinching up a fold of skin, and contrives to extract fluid nument from it, without, apparently, making any aperture in the skuntil it approaches to mature growth itself. I have very careful examined larvæ of *O. spinipes* that were thus half sucked away cannot say eaten), and I could find no mark at the spot whence I h just removed a larva of *Chrysis*. I have several times squeezed the *Odynerus* larva firmly, without any fluid exuding; even when squeezed almost to bursting, on only one occasion did a drop of clear fluid exuding to the *Chrysis* larva particular as to where it seizes the *Odynerus* any point that may offer itself to its jaws being seized.

When the devourer is nearly full-grown, and the victim is ver flaccid, a process that may be called eating takes place, and the *spinip* larva almost entirely disappears. The manner in which the larva *C. neglecta* and *ignita* and of *O. spinipes* itself eat the little green grul is precisely similar; when young, they merely suck the juices of severa and sometimes return to and finish these when they are larger, but they may often be found neglected when the larva is full-grown.

The larva of *C. bidentata* casts its skin four times during its growth at tolerably regular intervals, of about two days. I have twice see this process in operation: the skin splits down the back of the anterio segments, and the corneous covering of the head splits into two latera halves, which remain attached to the skin when the shedding is completed. As compared with the larvæ of the *Lepidoptera* and *Coleoptera* they feed up so rapidly, that one marvels how they have time to change their skins so often; many a *Lepidopteron* requiring four or five days

process of once changing its skin, whilst C. ignita is fed up in ys, during which it has found time to change its skin four times. also struck with the similarity between the larva of Chrysis and f Odynerus; a similarity that seems to be a true and not a superone. Throughout its existence, the larva of spinipes is yellow, scera are tolerably visible through the integument, especially ons of a yellow tortuous duct in the lateral dorsal region from the egment backwards. In Chrysis, the larva is white, and its interior ore masked by masses of white fat. The first spiracles, which, th usually situated in the second (the head being the first), belong erly to the third segment, are in Chrysis at the anterior margin of segment; but, in O. spinipes, they are actually in the second segt. The form of the head and parts of the mouth are very similar oth. This resemblance between the two larvæ is closer than that een the larvæ of spinipes and of the common wasp (Vespa vuls); and, in those points in which the larva of Chrysis least resemthat of the Odynerus (e.g., form of jaw, distinctness of viscera as through the skin, and colour), it resembles Vespa vulgaris more a O. spinipes does. I have not been able to seize any characters to inguish the larvæ of C. ignita, bidentata, and neglecta from each

C. neglecta spins a compact oval cocoon from 5 to 10 millimetres length, of a greyish-white and blackish silk, in layers, similar to the coons of various ichneumons, Ophion for example; this is surrounded a looser layer of brown silk, similar to that which loosely fills up a rest of the cell of O. spinipes, and some remains of the little green abs are always to be found at the bottom of the cell. The cocoon C. ignita is rather longer than that of C. neglecta, of a much slighter acture, and with hardly any loose silk about it.

The cocoon of *C. bidentata* is contained in that of *O. spinipes*, the econ proper occupying the lower half of the cell, and its roof being a almost mirror-like diaphragm of brown gummy silk stretched across are centre of the cocoon of the *Odynerus*, the walls of which, above the diaphragm, are also covered by a thin layer of silk spun by the arva of *Chrysis*; the lower part of the cocoon is in contact with the odynerus cocoon all round, and contains in its walls three vertical whitish patches, rather thicker than the rest of the cocoon, which, when removed from that of the *Odynerus*, is translucent.

Like the larva of O. spinipes and other hybernating Hymenopterous arvæ, that of Chrysis shrivels to a certain extent after it has spun its

158 tDecem

cocoon, the skin becoming loose and being thrown into very fine folthe head is bent forwards, and the lateral and sub-dorsal prominence which in the tense shining skin of the full-fed larva can hardly detected, are very distinct.

Passing the winter as larvæ, they remain in the pupa state of than three weeks before emerging, often however, if the weather cold, remaining perfect inside the cocoon for many days. C. ignita at C. neglecta escape by cutting off circular lids from their cocoons; bidentata cuts out the diaphragm of its cocoon, and makes a circular lide in the top of the spinipes cocoon.

I may note here a distinction in colouring between the male at female of *C. neglecta*, which, as it is not noted in Mr. Smith's excelled Monograph of the group in the 'Entomologist's Annual' for 186 may possibly not have been previously recorded; viz., that in the matche marginal sulcation of the third abdominal segment is blackish purplish from the margin almost up to the row of fossulets; where in the female the darker colour is confined to a line on the extremargin of the segment.

It is, perhaps, worth pointing out, as bearing on the doctrine of the survival of the fittest, that *C. bidentata* destroys those larvæ of *O. spinipes* that probably most strongly inherit the weakness, whateveit may have been, that led to the death of their parent.\*

Abergavenny, September, 1869.

Occurrence in Britain of Bledius spectabilis, Ktz.—In a note at p. 281 of the second vol. of the "Insecten Deutschlands," Dr. Kraatz has described, in a fer lines, under the name of spectabilis, a species of Bledius closely allied to B. tricornis, Herbst, and found abundantly in Greece. Some little time since, however M. Fauvel challenged the correctness of this new species, stating both that it was southern variety of B. tricornis, and that Dr. Kraatz had mistaken the true tricornis of Herbst. Dr. Kraatz, upon this, returned to the question in the Berl. Ent. Zeit., 1868, p. 346; re-affirmed the validity of the two species; and established their synonymy (about which there has been much confusion) in a most satisfactory

Bledius tricornis has been for a long time in the British catalogue, and I have now the pleasure of making known that Bledius spectabilis, Kr., is also a British species; and at the same time of shewing, from its geographical distribution, that it cannot be a southern form of B. tricornis. I have found B. spectabilis in great

<sup>\*</sup> The opponents of that doctrine might, however, reasonably urge that the majority of the causes of incompletion of the ordinary number of \*Odynerus\*\* cells would, in all probability, be direct and Incapable of transmission; such as the death by violence of the parent during the work (she being then ability of the soil for a proper nidus, a failure of adequate food for the larva, a sudden accession of tempestuous weather preventing further mason-work, &c.—Ebs.

mouth. B. tricornis I have never found but on one occasion, viz., at Deal, spring of 1863, when I had the pleasure of taking it in some numbers a collecting expedition, in which I was accompanied by Mr. Frederick and his son Mr. E. A. Smith. I imagine, therefore, from my own experience, are greater portion of the B. tricornis of our British collections will be found B. spectabilis, Kr. The two species, though exactly alike in point of colour, sily enough distinguished when the males are examined; for B. spectabilis is erably the larger of the two, and more sparingly punctured on the thorax ytra, and its male has on each side of the head a short pyramidical elevation, can in no sense be considered a horn; while in B. tricornis this elevation is sed by a short but distinct horn. When these characters have been perionees in size and punctuation.

The synonymy, as given by Dr. Kraatz (quite correctly, I believe), runs thus:—

tricornis, Herbst, Ol., Kr.
tricornis, Er. (Col. Marck.).
nuchicornis, Muls.

spectabilis, Kr.
tricornis, Er. (Gen. et spec.).
tricornis, Muls., Fauvel.

As far as M. Fauvel is concerned, I have verified the synonymy by sending him becimen of B. spectabilis, taken by me in Scotland, and obtaining from him its e as B. tricornis. What the insect is that he understands as B. spectabilis I is no idea (neither, judging from the above synonymy, has Kraatz); but it would interesting to know.—D. Sharp, Eccles, Thornhill, Dumfries, Nov. 10th, 1869.

[My own short series of B. tricornis, from Deal, is apparently correctly named. I find next to them three specimens, obtained lately from Mr. Brewer, solely account of their large size, and taken by him on the Norfolk coast, I believe, the are evidently B. spectabilis. In addition to the characters mentioned above that species, I observe that in these three the thoracic horn of the 3 is much ger than in tricornis; the thorax is less bulky in proportion to the elytra, with sides rather straighter, the contraction behind not quite so rounded, and two egular smooth discal spaces, starting from each side of the middle line and ected backwards, much more elevated and decided than in tricornis; and the wek colour of the elytra more confined to the base. It will be observed, that, in is larger insect, the frontal horns exhibit a diminution of size, so that it cannot considered a more highly developed form of tricornis.—E. C. R.]

Occurrence in Britain of Myllana glauca, Aubé.—Some time ago, I took in phagnum, on Wimbledon Common, a Myllana, which I could not satisfactorily offer to any of our recorded species, and which so distinguished an authority in that genus as Mr. Matthews also failed to identify. Hoping to be able to name it fiter that gentleman, I sent it for examination to M. A. Fauvel, who returned it s. M. glauca, Aubé, which M. Fauvel has recently, in 'L'Abeille,' identified with M. elongata, Kraatz. Subsequently to this determination, Dr. Sharp has observed to me that the elongata of Matthews is specifically distinct from Kraatz's subsequently described insect of the same name; remarking that the former is common quently described insect of the same name; remarking that the former is common the same in the same name; remarking that the former is common that the same is the same name; remarking that the former is common that the same is the same name; remarking that the former is common that the same is the same name; remarking that the former is common that the same is the same name; remarking that the former is common that the same is the same name; remarking that the former is common that the same name; remarking that the former is common that the same name; remarking that the same is to same name.

160 [Decemb

in Scotland, running in muddy places on the banks of rivers and streams, whith the latter occurs very rarely in England and Scotland, in Sphagnum. M. Anteglauca must, therefore, be added to our list, and M. elongata, Ktz., must be appressed. It may readily be distinguished from elongata, Matthews, by its small size and darker colour, the palpi and legs especially being nearly black.—E. C. Rr. 10, Lower Park Fields, Putney, S.W., November, 1869.

Note on Phytonomus Julinii, Sahlberg.—M. Capiomont, in his recent 'Révision des Hypérides,' Ann. de la Soc. Ent. de France, 1868, vol. 8, p. 153, considers the insect (which he, apparently with correctness, indentifies with the Hypera alternant of Stephens) as decidedly distinct from P. Pollux, of which the late Mr. Waltothought it to be a mere color variety. The addition of P. Julinii to our lists as good species has already been made, and on the authority of M. Capiomont; but have thought it may not be altogether useless if I were to enumerate the character upon which that gentleman proposes to separate it from P. Pollux (four specie intervene between them in the work above quoted), as the insect is not uncommon here ("assez commun en France," p. 152; "assez rare en France," p. 155), an observers in different parts of the kingdom may be more fortunate than I, in finding those characters sufficiently constant.

M. Capiomont, when treating of P. Julinii (p. 155), after stating generally that the pattern of its elytra, which are regularly and alternately lineated with dark and light scales, is sufficient to separate it from all the species allied to it, and is constantly the same, remarks that its form is rather different from that of P. Pollux, which, and especially its male, is always more slender, its female being more elongate. He states also that the strize of the elytra in P. Julinii are better defined, the absolute punctures being wider, squarer, and better marked; the interstices are more regularly shagreened, and have coarser scales; and the thorax is always less cylindrical.

At p. 160, treating of P. Pollux, and commencing with the somewhat contradictory statement that it has exactly the form of P. Julinii, he enumerates (in addition to the above characters) the following points of discrepancy:—the rostrum is a little longer in Pollux,  $\circ$ , and the depression between the eyes is generally better marked; the thorax is less rugulosely punctured (though, as he admits, there are exceptions on this point); the colours of the elytra, instead of being separated by distinct intervals, are confused, so that they are uniformly variegated with grey and black, always excepting the 3rd and 7th interstices, which are variegated with white for a greater or less portion of their length; the punctures of the strice are more uneven; the interstices are more shagreened (in Julinii more regularly shagreened, p. 155); and the female of Polluz is never so ventricose as the same sex of Julinii. M. Capiomont finally notes that, among the numerous specimens of Pollux that have come under his observation, he has never seen a single individual with the elytra almost lineated as in Julinii, or even with the coloration so disposed as to permit the suspicion of a passage from one species to the other. But he specifies a var. of Pollux having dark elytra with the 3rd and 7th interstices almost entirely, and the bases of some of the other interstices, whitish; and admits connections between this var. and the type.

far as my own experience goes, I may remark that I have never found P. except in the company of P. Pollux (though the converse does not hold and that I find the thoracic outline, and size, &c., of the punctures of the do of the interstitial scales do not afford constant diagnostic characters.—ID.

r certain British Hydropori recently brought forward by Dr. Sharp.

DROPORUS CESOLETUS, Aubé. I have in my collection two examples of this:

one given me by Dr. Power, the other taken by myself at Gosforth.

NIGRITA. I am very much inclined to think that the two insects separated Sharp [Entomologist's Monthly Magazine, Vol. vi, p. 82], are only the f one and the same species; the glossy, strongly punctured, pubescent one the male, and the obscure, less punctured, nearly glabrous one, the female. the species from the south of England, and it has occurred to me in several ies in Durham and Northumberland, rather sparingly, and copiously in erland, where it affects the runners from springs on the moors. In every these instances the two forms were taken in company, and in nearly equal ers. This, I think, would not have been the case, had they been distinct es. The last time I met with this species was on a moor near Lanercost, in when I took about one hundred individuals. This series furnished me with ties of both forms, principally in dilatation of the sides of the thorax, in the s of the elytra, and in sculpture, colour, and pubescence; in both sexes the -coloured examples are the most thickly furnished with hair. The general e is the same in all, the fovea on the clypens in all is alike, the margins, and es of the thorax are also alike, whilst the antennæ and legs are similarly

plated with fuscous.

Surely, Herr Thomson, when he wrote his "Conspectus Specierum," (Skand. ix, 73] must have had some other species in view, for he places pubescens wita, Shp.) in a section of which he says "prothorax lateribus crasse marginatus;" reas, in both sexes of our nigrita, the thorax is very finely margined at the sex.

By the kindness of Mr. Crotch, I have examined a pair,  $\mathfrak{F}$   $\mathfrak{Q}$ , of H. discretus, rm. The male is a little larger, a little wider in front, somewhat less convex, much more finely and closely punctured than any male nigrita; the pubescence, our of the antenne and legs are alike. The female is similar in form to the le, has the same alutaceous upper surface and pancity of pubescence as female nigrita, but is darker in colour, and has the punctures on the thorax delytra much finer. A long series, from various localities, may possibly show is species to be only a form of my nigrita; my series (33  $\mathfrak{F}$ , 30  $\mathfrak{P}$ ), however, so not enable me to unite them. I strongly suspect that H. brevis, Sahlb., is maded on a small female form of my nigrita, which has the apex of its elytra mewhat prominent; and if H. glabellus, Thoms., be another form of it, the sulpture of the upper surface has been omitted, as it has been in the descriptions many other female Hydradephaga.

H. MONTICOLA, Sharp. I have taken this insect both in Northumberland and tumberland, generally in mossy holes on the moors. Mistaking it for H. mela-arius, Stu., I have sent it to some of my friends as such. It is, however, abundantly distinct from that species.

162

H. PARALLEUS, Sharp. I have a single specimen of this species, which taken by a friend in the north of Northumberland.

H. Incognitus, Sharp. I had eight examples of this species, taken in variables in this vicinity, three of which have been lost in the post. Some years I separated it as distinct from palustris, but, on sending it to London, was told to it was only an immature variety of that commonest of all commoners.—Thos. Is Bold, Long Benton, Newcastle-on-Tyne, 18th October, 1869.

Pterostichus madidus a vegetable-feeder.—My friend Mr. Jas. Hardy writes a that he caught a specimen of this common beetle eating a bean, which was a green, and had been crushed by a passing foot; thus adding another to the list vegetable-feeding Geodephaga.—ID.

Captures of rare Coleoptera in Devonshire.—On 19th October last, I took, the wing in my conservatory here, a specimen of a minute Trichopterygian, which as Mr. Matthews tells me, is Actidium coarctatum, Haliday, of the greatest rari in this country, having been found only by its describer in Ireland, and (sing specimens) by Dr. Sharp and Mr. Crotch on the Chesil Bank. It appears to be recorded also from Sweden, the south of France, and Egypt. I also take here, company with the common Lathridius minutus, what I consider to be L. assimilian, with alternately raised interstices to the elytra, and usually dark lege otherwise extremely resembling L. minutus.—T. V. Wollaston, Barnepark Tel race, Teignmouth, November, 1869.

Occurrence of Bembidium obliquum at Manchester.—On a warm sunny day i last April, an example of the above rare beetle occurred to me at Clifton, nea Manchester, in a similar habitat to that recorded at page 219, vol. v, of thi Magazine. In May last, I captured Harpalus neglectus at the foot of the sand hill at Southport, near the New Hotel.—T. MORLEY, 29, John Street, Pendleton Manchester, November 13th, 1869.

Capture of Anisoxya fuscula, Gyll.—I have lately met with a single example of this rare Heteromerous beetle near here, crawling on a stone wall, a singular situation for such a species. I have also taken (near here) Cryphalus binodulus in abundance; Mycetochares bipustulata in decayed oak, but more often dead than alive; Brachytarsus scabrosus, in exceeding abundance about May, in most white-thorn hedges; and Colon brunneum (2), by sweeping in the evening.—H. Marsh, 842, Old Kent Road, S.E.

Note on Asiraca clavicornis, Fab.—Early in the morning of the 1st June last I found myself in Dartford, and, unexpectedly, with a lucid interval of half-an-hour to wait for the next train to London, chains and slavery. Then there revived within me a fond recollection of the lane "within easy distance" (as the house agents say), where the males of Drilus flavescens used to abound; where the female doubtless then existed, and might possibly now be found; where Asiraca clavicornis had once or twice been swept up by Mr. Rye; and where representatives might still exist. Filled with these ideas, I startled a chemist by an abrupt demand for

glass bottle without poison in it, got it, and left him evidently wondering aste, and perhaps thinking that I did mean to put poison in the bottle. I did, for a little further on I stole a leaf (only one and that very little) arrel bush, crushed it into the bottle, and strode on. Arrived at the lane,



I was soon prostrate on the sunny, grassy bank, poked about the roots of the grass, saw several Calyptonotus pedestris, and one Asiraca, \$\parallel{\text{.}}\$, which at once perched daintily on my hand. She had emerged from the base of a tuft of grass, looking for all the world like an Ochsenheimeria Birdella, and I rewarded her confidence by paying her more than heroic honour in placing her above the laurel. Here is a rough contemporaneous portrait of one of her ancestors, and so true are the lineaments of the race, preserved by nature, that this "false presentiment" may serve for the exact likeness of my captive.

istory, it is said, repeats itself. On the 7th October instant, I was at the blace, under similar circumstances, and I again found one Asiraca, this time a and one pupa. Having posted up my friend Scott with these data, he has and the felicity of taking "a lot" of this extraordinary species in the said among the roots of grass.—J. W. Douglas, Lee, October 16th, 1869.

Notes on the earlier stages of Nothris verbascella .- On coming to Norwich, one r first objects was, of course, to find Nothris verbascella, and before I had been many weeks, I had obtained from Mr. Jas. Reeve (who recorded its capture in Intelligencer" years ago) directions where to find it. Accordingly, on October 1868, I went to the locality indicated, and found in the undeveloped leaves at eart of the plants of Verbascum pulverulentum very young larvæ already at eating out these leaves and filling the empty space with black frass, but ng the woolly covering of the leaves almost untouched. All through the er they continued to feed slowly, and when the leaves began to grow in the g the larvæ rapidly increased in size and voracity. At this time, however, through the spring, fresh ones appeared to be hatched, for at the end of April, n many larvæ were well grown and a few had entered the pupa state, there still plenty of minute ones, and this continued to be the case till the middle of e; and even as late as July 3rd, when the plants had thrown up their flower es two or three feet high, half-grown larvæ were still to be found feeding in the nger leaves, and even boring into the leaf, stalks, and stems. At the same e pupæ were to be found in a slight web, on the under-side of the large lower res, generally in the angle of two ribs, or in a turned-down edge of a leaf.

My first specimen of the perfect insect emerged indoors on May 22nd, and y continued slowly to come out till the middle of July; while at large I noticed first flying late in the evening of June 25th, and the last on August 15th, but the perfect state they are seldom seen.

The habits of the larvæ are curious. They do not mine a leaf, that is, they eat a whole of the solid substance, but take care to leave the soft down with which is covered, and this is so thick as to form a complete protection for them. deed, so necessary is this covering of down to their comfort, that when placed

164

with pieces of leaf in a box to be brought home, although they will make a sill passage at the corner of the box, they always continue to detach sufficient do from the leaf to completely cover the silk, and when about to become pups always cover the cocoon with the same material.

Sometimes a large plant of the Mullein is so full of larvæ that all the your leaves are completely eaten out as fast as they appear, and a curious mass is for on the centre of the plant composed of the down of all these leaves and the experiment enclosed, and in this mass the largest larvæ generally reside, having galler through it, but it is never used to assume the pupa state in. When at last, for the older larvæ having spun up, the shoot is able to make a start, it carries with it traces of their ravages in scarred and blackened marks all up its sid which take some time to heal.

The history of this insect will therefore appear to be:—That the eggs are is in July and August, in the hearts of seedling plants of Verbascum pulverulents that part hatch in the autumn, and the rest in the spring; larve, consequent feeding from September or October till July, and the perfect insects appearing for the end of May till August.—Chas. G. Barrett, Norwich, 14th September, 1869.

Description of the larva of Hydracia micacea.—On the 22nd of June, 1869, received from the Honble. T. de Grey, a larva, which proved to be that of the species; and, more recently, the following note:—

"I first observed the larva by pulling up, on the 14th May, a sickly-lookin "plant of Equisetum arvense. It appeared to be feeding on the root and ster below the surface of the ground, but, when placed in a bottle with a supply the food-plant, it immediately entered a stem, and fed upon the inner substance hollowing it completely out, and ejecting the frass at the lower end.

"The larva moved readily from one piece into another, and throve upon the food till May 28th, when I supplied it with Equisetum fluviatile, on which it fe well till June 21st."

On arrival, this larva was  $1_{\gamma_0^3}$  inch in length, rather slender, cylindrical, an tapering just a little at the posterior extremity, its head as wide as the secons segment, the upper lip and mandibles large, the transverse folds and segmental divisions rather deeply cut.

The colour of the back and sides down to the spiracles was a rather deep purplish red-brown, without gloss, and a little paler on the thoracic segments and at the divisions; the sides below the spiracles, the belly, and the legs were paler, and of a dingy flesh colour: the head ochreous-brown, and mandibles blackish brown; a polished pale ochreous-brown semi-circular plate on the second segment rather broadly margined in front with blackish-brown; a small shining pale ochreous plate on the anal tip, having a terminal border of very small dark brown warts: the other tubercular warts arranged in the situation usual in stem feeders, also blackish-brown in colour, and emitting each a fine hair; the spiracles black; the prolegs tipped with brown.

At the beginning of July, the larva had attained 13 inch in length, and had become moderately stout in proportion, having meanwhile gradually grown paler on the back; and by the 10th of the month, the upper and under surfaces were

of a deep smoky dull flesh colour, the dorsal pulsating vessel just visible by darker stripe of the same; the warts, however, still dark brown, and and plates as before described.

erto the larva had fed well on both species of Equisetum, but it now ceased d began excavating a hole in the earth, at the side of its pot, in which, th, it had changed to a light ochreous-brown pupa, but without forming

pupa was \(^3\)-inch long, moderately stout, presenting no unusual peculiarity but ending in an anal spike, which was inserted in the earth, and on the segments were a few fine short bristles pointing backwards. The moth on the 14th of August.

n after the above larva came into my possession, I identified it with my one sent to me by Mr. Steele, of Congleton, on the 10th July, 1866 (which to be infested with Microgaster alvearius), and also of some others in May, are quite small, and all of them feeding in the roots of Dock, but which tunately failed to rear to the imago state.—WM. BUCKLER, Emsworth, 1869.

Normal habits observed in Ennomos lunaria.—The following vagaries in the

istory" of Ennomos lunaria may possibly be of interest to the readers of In August, 1868, I found five pupe of this insect at the roots of ash n Derbyshire, being, at the time, ignorant of their identity. At the end of 1869, all emerged, viz., three females, and two males. From a pair, I ed a considerable number of eggs, all of which, except twelve, I sent away ous applicants. The eggs which I had reserved, hatched the third week in Two larvæ died, and the remainder became pupæ at the end of June. Early y, I came to this place, and, in arranging my larvæ, pupæ, &c., I put those of  $\alpha$  into what I call "my next year's box," taking it for granted that they remain in "statu quo" throughout the winter, as the others had done,—and s species always does, according to my experience. In the first week of st however, upon looking into the box, I found a male had emerged and spoiled A few days later another male appeared, and at intervals, three females. followed an interregnum, but on or about the 20th of September, a male and le emerged simultaneously. These paired, and the female laid about 50 eggs. gh this proceeding was quite opposed to my previous experience, I did not ole myself, taking for granted that the eggs would remain dormant until the wing spring. Judge my dismay as well as astonishment, when, the first week ctober, I found every egg had hatched, and the young larvæ unusually brisk active. I thought this too bad, as I knew their food-plant would fail before were full-grown. However, I bestirred myself, and procured some as tender h as I could find. Placing this in a bottle of water within a glass cylinder, I ited the result. It struck me at once that the young larvæ were all "abroad." y were restless and uneasy, and did not take kindly to their food. However, he end of the month, they had passed through the second moult. Seeing then tit would be impossible to rear them, the birch leaves being destitute of nutrint, I threw them away. Whether, had I kept them, they would have hybered, or preferred dying of starvation, I cannot say. I thought that I was now at the end of my tether, when lo! on November 1st, emerged another fine for quite full of eggs! This was too much, and I have this day (November terminated its existence. All these proceedings are at such variance with previous experience of the insect, that I have thought them worth record J. Greene, Apsley Road, Redland, Bristol.

P.S.—Everything seems out of joint. This day (November 8th), has emerged the largest and finest female Eupithecia albipunctata I ever saw. I just remark that all my cages, boxes, &c., are placed in a room at the top of house, without a fire, and facing the north-east.—J.G.

Note on the odour of Sphinz convolvuli.—Early last September, my cousin resides some half-mile from hence) showed me a live male convolvuli which had picked up on his door step by a boy. The creature had evidently flown a light over the door, and had been stunned by coming sharply in contact with glass. On handling it, I noticed that the odour of musk (as observed by Hellins in a previous communication to the Magazine) was strongly percep. The sequel is curious:—After keeping it covered over with an inverted tumble three or four days, my cousin removed the thing from its prison, believing it dead or nearly so. When the gas was lighted up the same evening, however family were suddenly surprised by the great moth taking wing, flying at light, and eventually immolating itself in the flame.—H. G. Knaggs, 49, Ker Town Road.

Note on the development of the larva in the hybernating orum in Lepidopter I am anxious to obtain information bearing on the following point: "In t species of Lepidoptera which pass the winter in the egg-state, is the larva developed within the egg shell before or after hybernation?" and shall be much oblige anyone who has by him eggs of C. neustria, C. elinguaria, any of the genomos, M. rubiginata, C. immanata, prunata, testata, or populata, E. cervina H. popularis, C. graminis, L. cæspitis, or any other species, if he would kin examine three or four eggs, and let me know the result; off hand I am incli to think the larva is not developed till after hybernation, but this is only a gu which I should now be glad to have confirmed or disproved by an appeal facts.—J. Hellins, Exeter, November, 1869.

Xylina semibrunnea and Agrotis saucia at Dover.—I have to record the capt of Xylina semibrunnea at ivy-bloom, on the 29th October, in excellent conditi On the 26th October, I obtained four very fair examples of Agrotis saucia E. White, 2, Spring Place, Dover, 13th November, 1869.

List of Noctuidae observed in Perthshire and Morayshire in 1869.—In the early part of this spring, I visited Crieff, in Perthshire, intending, should the locality turn out promising, to remain there during the whole season. It situation of Crieff is very beautiful, and the romantic Strathearn has must mixed wood and high moorlands on either side. The climate, however, far colder and moister than in Morayshire. One of my first operations in the month of March was to sugar a few trees, but I found nothing beyond the usual

It vaccinii, and S. satellitia. Later on, when the weather became milder, the took out my lantern at night to search the low herbage for larvae. It became I took full-grown ones in plenty of T. pronuba, orbona, fimbria, and thina. The moss growing on walls and tree stumps also yielded many pupe on H. thalassina and adusta, R. tenebrosa, X. rurea, and one A. herbida. The produce were taken up to the early part of July, when, owing to the dearth its, I returned to Forres, in Morayshire. On the whole, the past season is a very poor one for sugaring; for, on reference to the list of captures last of the vir, p. 201), it will be seen that many good things never occurred at all, hers, which swarmed in 1868, only turned up as odd specimens. Probably, ter season, Crieff would yield a better result, if diligently worked.

two taken at Crieff.—T. batis; 28th June: scarce at sugar. A. psi; y: several pupæ, also with net. A. ligustri; 23rd May: pupæ on ash trees noss. A. rumicis; 28th June: rare, at sugar. L. lithargyria; 7th July: ommon with net, also at sugar. L. comma; 27th June: with net. ; 3rd July: rare, with net flying over rushes. X. rurea; 14th May: comith net, also from pupæ under moss on stumps. X. polyodon; 25th June: n at sugar, also taken with net. C. graminis; 27th June: larvæ found stones at Ferntower. M. anceps; 23rd June: not uncommon, with net. M. 25th June: rare, with net. M. brassica; 22nd June: common, with net rest. A. basilinea; 23rd June: common, with net. A. gemina; 22nd June: frequently with net: one very remarkable variety was taken. A. oculea; ly: common, with net. M. fasciuncula; 30th June: very frequent, with C. cubicularis; 26th June: common, at rest and with net. R. tenebrosa; May: very numerous at sugar, also bred from pupæ enclosed in a tough a attached to stones. A. segetum; 24th June: very common, some specimens ouzzling, one indeed, hard to distinguish from A. cinerea. A. exclamationis; June: common, at sugar and with net. A. porphyrea; 27th May: larvæ upæ near Loch Turrit. T. janthina; 2nd May: larvæ at night on broom. T. a; 3rd April: bred a fine series from larvæ found on broom. T. orbona; 1st larvæ on broom with the foregoing. T. pronuba; 7th May: larvæ on dock, very common at sugar. N. augur; 5th July: with net. N. plecta; 24th : rare, with net. N. festiva; 8th July: with net. N. rubi; 5th July: rare, net. T. piniperda; 14th April: common at sallow blooms. T. gothica; 31st h: common at sallows, also at sugar. T. rubricosa; 12th April: common at ws. T. instabilis; 10th April: common at sugar and sallows. T. stabilis; March: common at sallows. T. cruda; 14th April: sallows, not common. uccinii; 22nd March: very common at sugar and sallows. S. satellitia; 6th ch: common at sugar and sallows. X. cerago; 27th April: larvæ swarming in tatkins of sallow. A. herbida; 20th June: bred from pupa found here. A. ma; 29th June: common, with net. A. adusta; 10th May: not uncommon at , also with net. A. glauca; 27th June: one, with net. A. dentina; 29th e: with net. A. oleracea; 27th June: with net, not unfrequent. H. thalassina; 77th; pupæ very common. M. rectilinea; June 26th: took three very fine cimens of this beautiful moth at sugar. C. eroleta; 6th March: very common ugar and on sallows. C. umbratica; 26th June: rare, with net.

Noctuæ taken at Forres.—A. psi; 27th July: at sugar, larvæ very com A. leporina; 25th August: beat larvæ from birch. A. ligustri; 24th July; at sugar. A. rumicis; 1st September: swept larvæ from heather. A. myric 24th August: my excellent friend, Mr. G. B. Longstaff, beat from heather, hairy tuberculated larvæ, which can scarcely be any other than this species. conigera; 12th July: exceedingly common at sugar and ragwort, varying a deal in colour. L. lithargyria; 10th July: very abundant at sugar, varies m in colour. L. pallens; 12th July: swarming at sugar, also on ragwort. nictitans; 19th August: not uncommon at sugar. H. micacea; 12th August: uncommon at sugar, also at rest. X. rurea; 31st July: at sugar, surely very X. polyodon; 10th July: swarming at sugar, and varying from the ordinary south type to bistre-brown and black. C. graminis; 5th August: on ragwort by C. cytherea; 28th July: two specimens, one at sugar and the other at a "Cos Birch;" an interesting addition to the Morayshire list. L. testacea; swarming rest, at sugar, and with net, varies a good deal. M. abjecta; 31st July: sn not found before, I believe, so far north. M. anceps; 19th July: occasionally sugar. M. brassica; 19th July: commonly at sugar and also at rest. A. gemin 12th July: not unfrequent at sugar. A. oculea; 15th July: abundant at sug also on ragwort by day; as usual, very variable. M. fascuincula; 10th Ju swarming at sugar, also on ragwort by day. M. literosa; 20th July: at rest, & at sugared trees. C. blanda; 12th July: rare, at sugar; an addition to Morayshire list. C. cubicularis; 19th July: common at rest, also with net. tenebrosa; 23rd July: common. A. valligera; 28th July: not uncommon at su and on a "Cossus Birch," on ragwort by day. A. suffusa; 15th August: comm at sugar up to November. A. saucia; 29th September: took two at sugar, ne heard of this insect so far north before. A. segetum; 20th August: at rest. lunigera; 28th July: not uncommon at sugar. A. exclamationis; 10th Jul abundant at sugar. A. corticea; 15th July; not unfrequent at sugar, also w lantern on ragwort. A. cursoria; 11th August: not unfrequent, by smoking of "Bents," on the Culbin Sands. A. nigricans; 4th August: common und stones in barren fields, also at sugar. A. tritici; 4th August: swarming at re at sugar, and under stones with the last; varies immensely in size, colour, a markings, some specimens closely resembling obelisca. A. aquilina; 14th Augus rare, with net. A. agathina; 14th August: in great profusion flying over heath rarely at sugar. It is very difficult to take this moth in perfection. I know insect that so soon looses its freshness, owing to the looseness of the scales. T best plan to capture it is to light the lantern, and watch the places among t heather which are partly sheltered with trees. The insect appears to fly for abo a quarter of an hour briskly over the heather, after which it settles for half-an-ho or so, during which time it may be found on the heather bloom; the slighte shake, however, causes it to fall like a stone, when it is usually lost. After th half-hours' rest, it flies again, and must be taken with the net and lantern. The period yields by far the greatest number of moths. A. porphyrea; 16th July abundant flying over heather, larvæ afterwards in profusion. A. præcox; 51 August: smoked out of "Bents" on the Culbin Sands, also two specimens at re in a greenhouse and one in a spider's web, same place. A. pyrophila; 29th July smoked out of "Bents" on the Culbin Sands, also two specimens at rest in a hous T. subsequa; 10th September: only one or two specimens at sugar, very late; an ndition. T. orbona; 22nd July: swarming at sugar, also on ragwort by s usual, varying much in colour and markings. T. pronuba; 16th July: ndant at sugar and at rest, many remarkable varieties. N. glareosa; 18th not uncommon with net, at sugar, also on heather and broom. N. C-nigrum; y: at sugar. N. depuncta; 13th September: one forlorn individual put in arance in wretched plight. N. augur; August 1st: common at sugar 19th July: not unfrequent at sugar, also on ragwort. N. conflua; 20th requent at sugar, also on ragwort by day. N. Dahlii; 10th August; this season than usual, also late and badly coloured. N. rubi; 23rd July: t sugar. N. umbrosa; 5th August: on ragwort by day. N. baja; 28th common at sugar. N. neglecta; 20th August: not unfrequent at sugar and over heather. N. xanthographa; 17th July: common at sugar and on ragy night. T. piniperda; 18th July: larvæ. O. macilenta; 15th Septemcommon at sugar. A. rufina; 8th September: abundant at sugar, some sably beautiful varieties. A. litura; 28th August: very common at sugar. cinii; 13th September: swarming at sugar, varying in colour and markings arprising degree. Some specimens have the lines in slate-blue, while others the wings suffused with black lines and blotches. I fear C. spadicea must be ed from my last year's list, having mistaken some varieties of this insect for I. satellitia; 13th September: abundant at sugar. X. cerago; 26th July: at X. silago; 21st September: beaten from a birch tree. X. ferruginea; 6th ember: in great profusion at sugar. E. fulvago; 7th September: Mr. G. B. staff took it once or twice at sugar. C. trapezina; 10th September: at sugar. upsincola; larvæ abundant on Lychnis vespertina. D. cucubali; 8th August: e on Silene inflata. P. chi; 22nd August: very abundant at rest, also at ar. E. lutulenta; 18th August: at rest on ragwort and heather by night, also er stones in a barren field. E. nigra; 10th August: very abundant at sugar, hiding amongst pebbles on the paths. M. oxyacanthæ; 12th September: ndant at sugar. A. aprilina; 13th September: very frequent at sugar. P. iculosa; 31st August: common at sugar. A. occulta; 16th August: taken by friend, Mr. Longstaff, twice at sugar. A. nebulosa; 17th July: rare, with net. protea; 21st August: abundant at sugar and at rest; very variable, H. dena; 19th July: at rest on wall. H. oleracea; 20th July: at sugar. H. pisi; 1 September: larvæ found by Mr. Longstaff; an addition to the Morayshire list. vetusta; 25th August: common at sugar. C. exoleta; 7th September: in the eatest profusion at sugar. A. myrtilli; larvæ abounding on heather. P. gamma; h September: not so frequent as usual. P. interrogationis; 22nd August: one ring over heather at night—new to this locality. A. tragopogonis; 8th August: verywhere, at rest, also at sugar. S. anomala; 3rd August: very abundant with et, also at rest.

On my round of some 315 sugared trees, I frequently counted above 500, and n one occasion 846, moths.—Geo. Norman, Cluny Hill, Forres, October 30th, 1869.

[Some surprise having been expressed at the occurrence so far north of several species mentioned in Mr. Norman's Morayshire list for last year, we beg to say that we have very sufficient reasons for believing that he correctly determined his species, with the exception of the one he has cancelled in this paper. The productions of that district are evidently of a less boreal nature than are those of Rannoch.—Eds.]

Captures of Lepidoptera in the New Forest .- The following are our best on tures taken in various parts of the Forest during the past season :- L. sinap common in May and June; P. cratægi, not rare, in young fir plantations; C. Hyo saw one specimen in June; A. Paphia, very abundant (black variety, Valenia 20 specimens); A. Adippe, common; A. Aglaia, males common, females ran V. polychloros, common in the spring; the larvæ (from which we bred a fine serie were abundant in June. Our specimens emerged as early as the beginning of Jul L. Sibylla, abundant, also bred from larva; A. Galathea, a few; H. Semele, common P. Argiolus, males common, females three; P. Egon, abundant; N. Lucina; fuciformis, common at rhododendron flowers; S. bombyliformis, 10; C. porcellu L. aureola, H. hectus, T. trifolii, C. miniata, L. mesomella, L. complanula, C. villio A. fuliginosa, A. mendica, L. monacha, E. lanestris, larvæ abundant on sloe an hawthorn, E. advenaria, E. dolobraria, P. syringaria, B. consortaria, T. consonaria P. cytisaria, N. viridata, E. porata, punctaria, and trilinearia, A. trigeminata, temerata, C. tominata (abundant), A. strigillaria, S. plumaria, M. liturata, 1 rubiginata, S. undulata, L. viretata, T. chærophyllata, A. subsericeata, A. plagiat E. palumbaria, M. euphorbiata (common), P. unguicula and hamula, E. puniceali and purpuralis, H. barbalis, E. glyphica, E. flammealis, E. fuscula, E. angularia H. prasinana, A. caliginosa, common, but worn. We obtained our specimens of thi by sweeping the long grass in damp woods. I am kindly indebted to Mr. Cappe and Mr. Owen for furnishing me with the exact locality for the species.

On the whole, sugar was unprofitable. Our best captures were T. batis, frest from the pupa and in fine condition the first week in September, which is, I think very late; C. diluta, H. nictitans, C. cytherea (abundant), A. puta, A. saucia several, N. umbrosa, baja, triangulum, and neglecta (2), C. diffinis, H. contigua (1) R. tenebrosa, T. fimbria, janthina and orbona, C. sponsa (6), and C. promissa (2) Many other common species surrounded every tree. Besides the above, we captured an immense number of common species not worth recording.—J. E. & H. Ramsay Cox, W. Dulwich, S.E.

Lepidoptera captured at Darlington .- I annex a list of a few things which I have met with this season; all of them, excepting C. albersana, were taken within three miles of the town. With one exception, there is nothing very wonderful about them; the wonder is, that, though I have lived here and collected assiduously for the last twenty years, I never before met with them in this locality. Thyatira batis, one at sugar; Macaria liturata, common; Mixodia Ratzeburgiana (common among spruce firs) I never took before; Halonota tetragonana, one, beaten out; Coccyx nanana, in the same manner as M. Ratzeburgiana; Retinia pinicolana, common among Scotch firs; Retinia pinivorana, one, among Scotch firs; Carpocapsa grossana, one, beaten out; Catoptria albersana, one bred, larva in April; Eupacilia atricapitana, one flying; Lampronia luzella, one, beaten out; Cerostoma lucella, a few from young oaks, I find that by day they generally drop straight down, but not towards evening; Gelechia Mouffetella, one bred; Gelechia dodecella, a few from fir; Zelleria hepariella, one, beaten out (no yew or privet in the wood); Asychna profugella, one, beaten out. The larva of Gelechia rhombella is very abundant in the apple bushes in hedges about the town. The moths are all of a very dark grey colour, none of them being light like southern specimens.-J. SANG, High Row, Darlington, September 6th, 1869.

Thera juniperata near Edinburgh.—On the 28th of October, I beat one sickly

ince dead) of this species out of juniper, on the Pentland Hills. This is the ne juniperata has been met with in this district.—A. Wilson, Edinburgh, er, 1869.

te on Eupithecia helveticata.—On the same day, 14 full-grown larvæ of this were beaten out. From the same localities I had larvæ in some number he end of August, and many were then full-grown.

forwarded a few larvæ to Professor Zeller, about the middle of September ich date most of those taken were in pupæ or spun up), but have not as arned whether these have confirmed or modified his belief that helveticata couthata are one species.

centhata are one species.

Ithough I have examined large numbers of the larvæ, I have as yet failed to epoints relied on by the Rev. Mr. Crewe, as separating it from arcenthata. e points relied on by the Rev. Mr. Crewe, as separating it from arcenthata. gards the imago, I find, in this district, that the large pale var. is scarce, gards the imago, I find, in this district, that the large pale var. is scarce, to black varieties more common, and medium shades by far the most common.

Additional note (and corrections) respecting the sexes of Papilio Merope.—In ote on p. 148 of the last number of the Magazine, for H. T. Usher, Esq., read Ussher; also at line 5 from bottom of page, for Danais Nicarius read Danais ius.

Since writing the above note, I have noticed a peculiarity in the outline of the set of the sexes of *P. Merope* which I think worth mentioning. In the southern the outer margin of the anterior wings is strongly undulated in both sexes; the outer margin form (*P. Brutus*) the margin is nearly entire.—A. G. Butler, and Museum, *October* 10th, 1869.

Great abundance of Pieris rapæ.—On the 24th of August, immense numbers Pieris rapæ suddenly appeared here, filling every garden with their swarms. The 25th, they were still more numerous, and continued so until the 28th, as we had a storm of wind and rain, with a great fall of temperature, since they have been much less abundant. Thousands were slain by the gardeners, the of whom were heard to say that for the first time in their lives they had as a day's work in entomology. I examined some scores of the killed, and all re, without exception, the small white, Pieris rapæ.—T. J. Bold, Long Benton, thember, 1869.

Great abundance of Thrips.—During the hot calm weather in August, immense mbers of a small black Thrips were on the wing in our neighbourhood, and were a eat annoyance both to children and adults, by crawling upon their hands and seltering amongst their hair. Many people declare that they were teen by them. All flowers were much infested, and immense swarms came from the wheat fields, then in the process of reaping. These swarms entering by open corns and windows, were, in many cases, swept from the walls and floors like dust, thilst quiet corners, door-steps, and the like, were black with congregated thousands, much like what they were with Aphildes in the cholera year.—ID.

ENTOMOLOGICAL SOCIETY OF LONDON, 1st November, 1869.—H. W. Bates, 2sq., F.Z.S., President, in the Chair.

The President announced the presence at the Meeting of Dr. J. L. Lee one of the Honorary Members, a distinguished American entomologist.

Mr. Janson exhibited on behalf of Dr. Power, 7 species of Coleoptera ne the British lists, viz., Triarthrin Maerkelii, Schmidt, taken near Esher in 1869, and also by Mr. O. Janson at Shirley, about the same time. Silvanus sir Er., taken at Esher, on 4th August; Nitpus gonospermi, Duval, of which is specimens were taken by Mr. J. B. Syme in the Orkney Islands; Bruchus & Schön., from Birch-wood and Gravesend; B. nigripes, Schön., from Brighton nubilus, Boh., from Surbiton and Gravesend; and B. canus, Germ., from Graves also Phratora cavifrons, Thoms. (see Ent. M. Mag., vol. v, p. 100), from El Cowley, and Gravesend.

Mr. Grut exhibited a selection of *Coleoptera* taken by M. T. Deyrolle Trebizond, including four new species of *Carabus*.

Mr. M'Lachlan exhibited larvæ, pupa, and cocoon of Mantispa styriaca, to him by Herr Brauer, of Vienna, the species being parasitic in its earlier st in the nest of a spider of the genus Lycosa; the young larvæ, on emerging the egg, had moderately well developed legs, but became almost apodal as approached maturity.

Mr. Smith exhibited a considerable number of Melöe rugosa, Marsham, w species had not been captured for many years. He found them near Prittlev in Essex, in the vicinity of the nest of an Anthophora. He had hoped to have estimated them alive, but their pugnacious disposition caused them to mutilate eother to such an extent that he had very few perfect specimens left.

Mr. Müller exhibited part of his collection of galls, calling particular attent to two forms of maple galls, one on the leaf, the other on the footstalk; notwistanding the difference in appearance and situation of these excrescences, he believ them to have both been produced by Acarus aceris of Kaltenbach.

Mr. Cutter exhibited, on behalf of Mr. Ward, a  $\circ$  of Ornithoptera Brookia that sex being previously unknown; also a magnificent example of Papilio An machus, from the interior of Old Calabar, the only known example having been one collected by Smeathmann, a century since, and figured by Drury.

Mr. Wormald exhibited some Rhopalocera from Shanghai and neighbourhor collected by Mr. W. B. Pryer. Among them were examples of the curious Anticaris, with hook-tipped wings (A. Scolymus), hitherto only known from Japan.

Mr. Dunning exhibited some Bombyces sent from Shanghai by Mr. Holdswort among them insects identified as Eona punctata of Walker, Lasiocampa remota Walker, and Lebeda hebes of Walker. Mr. Holdsworth mentioned having bred three from one description of larva.

The President exhibited a drawing of an extraordinary larva sent by Mr. Hem Birchall from New Granada. It was apparently a species of *Chærocampa*, and we remarkable for the extraordinary form of the head, which resembled that of or of the venomous snakes of that country.

Mr. W. F. Kirby communicated a paper "On the Diurnal Lepidoptera Gmelin's edition of the "Systema Natura.'"

Professor Westwood read some notes on the type collections in Sweden, viz at Stockholm, those of De Geer, Paykull, Fallen, some of Schönherr's, and e Gyllenhal's, Dalman, Fries, Billberg, Sahlberg, Boheman, Stal, Holmgren, Thomson Wallengren, Wahlberg, and the types of the "Eugénie's Resa;" in Upsala, those of Linné (Mus. Lod. Ulricæ), Thunberg, and Gyllenhal; in Lund, those o Zetterstedt, Dahlbom, Thomson, and Ljungh.

# LIST OF BRITISH SYRPHIDE.

#### BY G. H. VERRALL.

As I wish to rescue the British Diptera from the state of confusion ich they exist in most collections, I offer a systematic list of one most attractive families; hoping, in course of time, to supplement the others. As Mr. Walker, in the "Diptera Britannica," has ided 153 species of Syrphide, and I now give only 166, and even of these doubtfully, I have not materially increased our number exists; but upwards of 20 of Walker's are sunk as varieties, and in a cases the nomenclature has been brought more into agreement that in use on the continent. When I have marked a species an asterisk, I have not been able to critically examine it, but we it to be truly British. I intend to supplement the list with the notes upon a number of the species; and as a caution, I may with that I do not consider it at all exhaustive, but anticipate in it to at least 200 species.

BACCHA, F. elongata, F. scutellata, Mg. obscuripennis, Mg.

SPHEGINA, Mg. clunipes, Fln.

ASCIA, Mg.

podagrica, F. floralis, Mg.

dispar, Wlk. (Mg?) hastata, Wlk. (Mg?)

\*geniculata, Mg.

DOROS, Mg. conopseus, F.

XANTHOGRAMMA, Schin. citrofasciata, Deg. ornata, Mg.

SPHÆROPHORIA, St. Farg. scripta, L. dispar, Lw. picta, Mg.

menthastri, L. nitidicollis, Ztt. tæniata, Wlk.

DIDEA, Meq. \*alneti, Fln.

SYRPHUS, F.

pyrastri, L.
unicolor, Curt.
laternarius, Müll.
glaucius, L.
albostriatus, Fln.
confusus, Egg.
lunulatus, Mg.
tricinctus, Fln.
topiarius, Mg.
grossularia, Mg.
diaphanus, Ztt.
ribesii, L.
vitripennis, Mg.

nitidicollis, Mg.

nitens, Ztt.?

latifasciatus, Meq.
excisus, Ztt.
affinis, Lw.
flaviceps, Rond.
corollæ, F.
crenatus, Meq.
luniger, Mg.
arcuatus, Fln.
lasiophthalmus, Ztt.
umbellatarum, F.
auricollis, Mg.
maculicornis, Ztt.
cinctellus, Ztt.
balteatus, Deg.
bifasciatus, F.

MELANOSTOMA, Schin.
hyalinata, Fln.
mellina, L.
scalaris, F.
gracilis, Mg.
maculosa, Mg.
ambigua, Fin.
concolor, Wlk.

PLATYCHIRUS, St. Farg.
manicatus, Mg.
albimanus, F.
cyaneus, Wlk.
peltatus, Mg.
\*fulviventris, Mcq.
ferrugineus, Mcq.
immarginatus, Ztt.
clypeatus, Mg.

PYROPHÆNA, Schin.
ocymi, F.
granditarsus, Wlk.
rosarum, F.

CHILOSIA, Mg. cestracea, L.

intonsa, Lw. pigra, Lw. vulpina, Mq? barbata, Lw. variabilis, Pz. nigrina, Mg. impressa, Lw. albitarsis, Mg., Ztt., Wlk. flavimana, Mg., Ztt. ? mutabilis, Fln. ? funeralis, Mg. flavicornis, F. flavipes, Pz. chrysocoma, Mg. grossa, Fln. chloris, Mg. decidua, Egg. ? vernalis, Fln. ? chalybeata, Mg. præcox, Ztt. pulchripes, Lw. means, Ztt., Wlk. subalpina, Rond. scutellata, Fln. soror, Ztt. scutellata, Wlk. maculicornis, Bons.? pubera, Ztt. pedemontana, Rond. sparsa, Lw. antiqua, Mg. nigripes, Mg. maculata, Fln.

LEUCOZONA, Schin. lucorum, L.

CHRYSOCHLAMYS,(Rond.) Wo

BRACHYOPA, Mg. bicolor, Fln.

RHINGIA, Scop.

mpestris, Mg.
rostrata, Deg., Wlk.
strata, L.

volucella, Gffr.
ombylans, L.
plumata, Deg.
ellucens, L.
flata, F.
nanis, L.
sericomyia, Mg.
orealis, Fln.
appona, L.
Arctophila, Schin.
mussitans, F.

superbiens, Wik. ERISTALIS, Ltr.

eneus, Scop.

stygius, Newm.
cryptarum, F.
nubilipennis, Curt.

tenax, L.
vulpinus, Mg.

intricarius, L. arbustorum, L.

fossarum, Wlk.

pertinax, Scop. similis, Fln.

pratorum, Mg.

nemorum, L. horticola, Deg.

HELOPHILUS, Mg. floreus, L.

nigrotarsatus, Schin. trivittatus, F.

hybridus, Lw. pendulus, L.

similis, Curt.

versicolor, F.

\*frutetorum, F. lunulatus, Mg.

transfugus, L.

lineatus, F.
vittatus, Mg.
Ruddii, Curt.

MERODON, Mg.

equestris, F. clavipes, F.

TROPIDIA, Mg.
milesiformis, Fln.
rufomaculata, Curt.

SPILOMYIA, Mg. speciosa, Rossi.

XYLOTA, Mg.

segnis, L.
lenta, Mg.
nemorum, F.
sylvarum, L.

SYRITTA, St. Farg. pipiens, L.

BRACHYPALPUS, Mg.

bimaculatus, Meq. femorata(Criorhina), Wlk.

CRIORHINA, Meq.

ruficauda, Deg. ranunculi, Pz. berberina, F.

asilica, Fln. oxyacanthæ, Mg.

floccosa, Mg.
regula, Fln.

MYOLEPTA, Newm. luteola, Gmel.

EUMERUS, Mg.

sabulonum, Fln.
selene, Mq.
ornatus, Mg.
lunulatus, Mg.

\*litoralis, Curt.

ORTHONEURA, Mcq.

elegans, Mg. nobilis, Fln.

CHRYSOGASTER, Mg.
splendida, Mg.
metallina, F.
discicornis, Mg.
metallica, F.
viduata, L., Fln.
Macquarti, Lw.
splendens, Mg.
chalybeata, Mg.
cœmeteriorum, L.
? fumipennis, Wlk.

PIPIZA, Fln.
noctiluca, L.
bimaculata, Mg?
notata, Mg?
flavitarsis, Mg?
guttata, Mg.
quadrimaculata, Pz.
quadriguttata, Mcq.?
vana, Ztt.
noctilucæ, 3,?
lugubris, F.
luctuosa, Mcq.

cnemodon, Egg.
acuminata, Lw.
vitripennis, Wlk.

PIPIZELLA, Rond.
virens, F.
biguttata, Curt.
flavitarsis, Wik.
Heringii, Ztt.

\*interrupta, Hal. \*melancholica, Mg. PARAGUS, Ltr. tibialis, Fln. sigillatus, Curt. obscurus, Mq. femoratus, Mq. CHRYSOTOXUM, Mg. sylvarum, Mq. arcuatum, Wlk. ? marginatum, Wlk. arcuatum, L. scoticum, Curt. octomaculatum, Curt. elegans, Lw. intermedium, Wlk. festivum, L. vernale, Lw. bieinetum, L.

PSARUS, Ltr. \*abdominalis, F.

CALLICERA, Pz.

microdon, Mg.

mutabilis, L.

apiformis, Wlk.
devius, L.

apiformis, Curt.

CERIA, F. conopsoides, L.

\*\*\* I shall feel much obliged to any gentleman who possesses any Syrphidæ, if he will allow me to examine them. It will be a benefit to both of us, as it will improve the arrangement and nomenclature of his collection, and increase my knowledge of the British species. I should like anybody willing to send to put the whole of his specimens in a store box, and send them by train; as I think types picked out to send by post would miss many allied species.

The Mulberries, Denmark Hill, S.E.; December, 1869.

RIPTIONS OF TWO NEW SPECIES OF LEPIDOPTERA RHOPALOCERA.

BY W. C. HEWITSON, F.L.S.

## CHARAXES CINADON.

Upper-side. Male rufous-brown. Both wings crossed beyond the le by a rufeus band, broadest where the wings meet, narrow and in orm of a V at its commencement on the costal margin: both wings s from the band to the outer margin. Anterior wing with two spots within the cell, and three or four larger black spots on the r border of the band: a marginal series of rufous spots. Posterior with a sub-marginal series of lunular rufous spots: the margin k: two minute spots of lilac-white at the anal angle.

Underside. Both wings with the central band (which is narrower above on the anterior wing) silver: three spots in the cell, two ow these, one at the end of the cell and three touching the central d, all black bordered with silver: a sub-marginal band of grey, bored towards the anal angle with black. Posterior wing with a black d at the base bordered with silver: three brown bands bordered h silver parallel and near to the inner margin, a band near the base er at its commencement on the costal margin, black below bordered h silver and in the form of a V where it runs parallel to the bands t described: three or four black spots on the central band and bend it a band of black spots bordered outwardly with silver: a subrginal band of spots and the outer margin black, bordered with ver: two spots of silvery-grey bordered with black at the anal angle.

Exp. 320 inch. Hab. Natal.

In the collection of Mr. Christopher Ward. This species, one of e most beautiful of the genus, decorated as it is profusely with silver, as taken by Mr. Morant, who describes it as exceedingly swift in ght.

## OPSIPHANES ORGETORIX.

Upper-side. Male dark rufous-brown. Anterior wing crossed om the costal margin beyond its middle to the anal angle by a curved afous band, broadest where it crosses the discoidal nervures: three ub-apical white spots. Posterior wing with a tuft of hair having its rigin near the end of the cell: the outer margin broadly rufous.

Under-side rufous, beautifully undulated and spotted with dark brown and white. Anterior wing with a brown spot near the base, a uadrifid spot in the cell bordered with black, a broad transverse dark prown band before the middle: the outer margin rufous-brown, bordered inwardly with rufous-yellow in arches on its inner margin, and eversed by two linear arched bands of black; a sub-apical oval occurred with rufous border, and for pupil a line of white: some apical spots white. Posterior wing with two large ocelli bordered with black, touching the costal margin at its middle, marked by a semi-circum white line; the other towards the anal angle, marked by a round a bordered with black, and irrorated with brown and yellow, crowned a line of white: the outer margin broadly rufous, its inner bording age.

Female dark rufous-brown. Anterior wing crossed near the mid by a nearly straight band of lilac-grey. Posterior wing with the ou margin broadly orange-yellow. Under-side exactly as in the male.

Exp. 41 inch. Hab. Nicaragua (Chontales).

In the collection of W. C. Hewitson,

I am indebted to Mr. Belt for this very interesting addition to a collection. The male on the upper-side scarcely differs from O. Bereof thus, which, with all the other species we know, has a female like itse This species alone has a female very dissimilar in the colour and position of the band of the anterior wing.

Oatlands, Weybridge: December, 1869.

ON SOME BRITISH CYNIPIDE, BY THE REV. T. A. MARSHALL, M.A.

(Continued from Vol. iv, p. 275.)

In former papers I have endeavoured to enumerate British speci as far as the genus Aulax, inclusive. I have now to deal with the remaining sections, (1) INQUILINE, (2) APHIDIVORE, and (3) PAR. SITICE. The first of these consists in Britain at present of the gent Synergus alone. These insects form a natural link between the gal makers and the carnivorous groups that follow. They are foun abundantly in all galls, upon the interior substance of which they are supposed to feed in the larva state, although they contribute nothin to the formation of the excrescence. Their position in life, is, therefore similar to that of the cuckoo-bees, Apathus, &c., which are not carn vorous, but avail themselves of the labours of others for support. Th real proprietor of a gall infested by Synergi never arrives at maturity so far as I have been able to observe. The reason of this seems obscure Several inquilines will emerge from a gall of C. lignicola, intended only to accommodate a single Cynips. They cannot have sustained them selves on the flesh of the Cynips, which would be insufficient for more one. It does not appear, then, why the Cynips should not come uninjured; as the contents of these large galls seem to be more enough both for the legitimate owner and the intruders billeted him. These guest-gallflies have been a fruitful source of error servers. No less than 7 of the species described by Linné as ng galls, are in fact referable to the genus Synergus. The numespecies have found no describer but Hartig, whose brevity renders nlikely that any one should succeed in identifying them with inty. The second group, the Aphidivorae, consists of the numeand minute species of the genus Allotria, which live in the larval pupal states in the bodies of plant-lice, and stand first among the nine parasites. They are distinct from those which follow by their cture, which closely resembles that of Cynips. The members of third\* group are all true parasites, infesting various insects, and scially, it would seem, appointed to keep down the numbers of the terous order. I shall now give a short table of the British genera, ore proceeding in my proposed attempt to reckon up the indigenous cies.

Facies prope clypeum striolata. Pronotum sensim declive. Terebra exserta. Coxæ posticæ distantes ......l. synergus, Hart.

Facies haud striolata. Pronotum verticale. Terebra haud exserta. Coxe posticæ approximatæ.

A. Scutelli fovea cyathiformis, marginata. Abdomen segmento 2<sup>do</sup> maximo, cæteris brevissimis. (Eucoilidæ.)

a. Alæ apice integræ, nec ciliatæ.

bb. Abdomen segmento 2<sup>40</sup> basi tomentoso.

c. Metapleuræ haud tomentosæ. Alæ completæ. Antennarum articulus l<sup>us</sup> 2<sup>do</sup> longior ......4. EUCOILA, Westw.

cc. Metapleuræ tomentosæ. Alæ abbreviatæ. Antennarum articulus 1<sup>118</sup> 2<sup>40</sup> parum longior..6. Glauraspidia, Thoms.

<sup>\*</sup> According to Walsh, the genera Aulax, Amblynotus, and Sarothrus are inquilines. Some of a European species of Aulax certainly make galls. Of the habits of the other two nothing is known Europe; and it seems better to leave our species where they are for the present, —T. A. M.

aa.	Alæ apice marginatæ, longius ciliatæ,		
	—sed interdum desunt	KLEIDOTOMA.	West

[Janu

- AA. Scutelli fovea nunquam marginata, minimè cyathiformis, interdum nulla.

  - aa. Abdomen non aut vix compressum,
     segmentis ♂ ♀ 2 6 inæqualibus.
     Antennæ ♂ 14-articulatæ.
    - Scutellum basi haud foveolatum. Abdomen segmento 2° 3° longiore....... 2. ALLOTRIA, Westw.
      - bb. Scutellum basi foveolatum vel bifoveolatum. Abdomen segmento 2° 3° non vel parum longiore.
        - c. Abdomen petiolatum, segmento 2º 3º non breviore.
          - d. Metathorax areolis 2 instructus. Petiolus striolatus, coxis posticis brevior. Abdomen non compressum ......14. EGILIPS, Hal.
        - cc. Abdomen subsessile, segmento
          2° 3° breviore.
          - e. Segmentum secundum dorso in ligulam non producto, simplex.
            - f. Scutellum fovea basali unica.9. LONCHIDIA, Thoms.
          - ##. Scutellum fovea basali geminata.

            - gg. Oculi nudi.
              - h. Segmentum 2<sup>nm</sup> basi

- kk. Metapleuræ læves.
  Antennæ ? thorace
  non longiores .....11. sarothrus, Hart.
- hh. Segmentum 2um basi nudum, glaberrimum.10. MELANIPS, Hal.
- ee. Segmentum secundum dorso in ligulam producto.
  - Scutellum apice truncatum, haud mucronatum ........15. ONYCHIA, Hal.

Mr. Haliday formerly detected a species allied to Allotria, but ng the two apical joints of the antennæ connate. This he named IS. Charips microcera. It is not included above, for want of types description. All the above genera may easily be found by the sector except Ibalia, Lonchidia, Onychia, and Aspicera. Ibalia is a site of Sirex juvencus, and is well known by Curtis's figure. It probably not been met with since his time. Onychia I have never n able to find. Aspicera includes Evania ediogaster, Rossi, which the scutellum produced into a horizontal spine; it is stated to be tish in several books. A species of Lonchidia, having a dark spot in h fore-wing, was first noticed by Mr. Walker, and afterwards taken me in Wales. Synergus, Eucoila, and Allotria are rich in species, require much further investigation. Synergus may be bred from ls, or taken by beating oaks, ad libitum. The Eucoilidæ are parasites Anthomyia, Syrphus, &c., and frequent Umbelliferæ, as does also gites. The curious little Glauraspidia I have found rarely, in dark nces, in woods. The minute Kleidotomæ occur in flowers,-and at st two sub-apterous species are to be sought on the sea shore, nongst Algæ (Figites subapterus, Walk., and Kl. halophila, Thoms.). gilips is common in flower gardens, and on windows. The petiole is t so long as that of Anacharis, which resembles a Pelopæus or Ammoila, in petto. Figites is easily distinguished from Eucoila by the utellum, which in the latter has a singular cup-shaped fovea, marned all round. Melanips is sometimes common on nettles.

Observations on Necrophorus microcephalus, Thoms.—Herr Michow (Be Ent. Zeit., X, p. 411) makes some remarks upon this species, entirely in accords with my observations upon the subject in the "Entomologist's Annual" for 1 and of which I add a translation, as likely to interest British Colcopterists.

"Among a great number of Necrophorus ruspator, Er., taken by m Pomerania, is a & exactly agreeing with the diagnosis of microcephalus, Thom moreover, amongst these same N. ruspator, are two ?, noticeable for their st and delicate build of body (analogous to microcephalus, 3). These 2 had the a of the trochanter, as in the larger ruspator ?, thin, pointed or obtuse; but believed that I found a constant differential character for the small 9 in structure of the clypeus, whereby I referred them to the microcephalus of Thoms whose diagnosis (clypeus of the & with a membranous depression in the middle was inclined to complete thus: - "clypeus of the ? with a membranous depress near the anterior margin." But, after having examined my other species Necrophorus, I am inclined to doubt the value of this as a diagnostic for J as as ?. Large and small examples of N. sepultor, Charp., exhibit characters sim to those of ruspator; thus, -in large & sepultor the inner apex of the trochanter strongly developed, and projects laterally, whilst in small specimens it does project laterally, and the projection sometimes entirely disappears, thus proximating to the ♀; the clypeus, also, in the larger & has a deep membran depression, reaching to the posterior margin, whilst in the smaller specimens depression only reaches the middle. I have, moreover, a & which forms a transit from the largest to the smallest & sepultor, in the structure of the apex of trochanters and of its clypeus. In the commoner species of Necrophorus, structure of the clypeus and trochanters generally varies too much (as well in ¿ as the ♀) for those parts to afford valid differential characters. Moreover, as that genus the  $\delta$  universally exhibits a preponderance of development in build body, it is evident to me that our species individually exhibit in their smaller ma a form which, whilst approximating very closely to the female type in general structure, also comes very near that type in the slighter development of individu organs, without thereby forming a separate species. In this view I am materia assisted by the fact that these smaller varieties exactly agree, as to pattern of the elytra, with the larger forms to which they specifically belong; whilst all the speci of Necrophorus that are acknowledged to be good, and exhibit other constant as differential characters, are very distinctly separable by the clytral marking If it be possible to indicate a like connexion, through intermediate form between N. gallicus and N. fossor (for which I have not sufficient material then the former will constitute the type and the latter the less developed form the same species."-E. C. RYE, 10, Lower Park Fields, Putney, S.W., November 1869.

Note on Microptinus (Nitpus) gonospermi.—Referring to my remarks upon the supposed British origin of certain examples of this insect in the Annual for 1870 I may observe that I have just received a letter from Mr. Syme (too late for in corporation in that publication), wherein he says that M. gonospermi must not be put in the British lists on his authority, for he has no idea when he took it certainly not in Orkney, where he took Niptus crenatus and no other of the Ptinida

adds that he has received many plants from the Canaries, and very beetle came in some of these, especially as he took it in the house. Servations fully agree with my own recorded convictions.—ID.

iptera at Folkestone.—When collecting Coleoptera at Folkestone in June is particularly struck with the abundance of Hemiptera-Heteroptera in the of that town; certain of the larger species being especially plentiful. the most common was Eurygaster maurus, varying from light drab or grey deep red-brown. This large and interesting insect was to be seen by the en, or more, at almost every sweep of the net among the grassy ditches on slopes behind the town. Folkestone is the only locality given for it in and Scott's "British Hemiptera ; " and the earliest time therein stated for ne two species next mentioned, viz., July, may certainly be ante-dated by a onth. It is excessively difficult, in mounting this bug, to persuade its legs ne any other but a swimming position on the card. Equally abundant, on s of plants, both in the above-mentioned places and all along the cuttings B.E.R. for many miles, was Coreus hirticornis; and the awkward looking s scapha occurred, almost as commonly, in similar situations. The prettily d Eysarcoris melanocephalus, for which the only locality given in Brit. Hem. nth (where I have taken it in June, on the road near the "Fox"), also fell net sparingly; as did, once, Ælioides inflexa, on the Railway bank close to tte Station: for this insect Folkestone seems a new locality. On the Warren, large stones in grassy places at the bottoms of the cliffs, I found phalus agilis, on some half-dozen occasions, when looking for Plinthus. For sect, which fully acts up to its specific name, both the time and locality apbe new, as it is only recorded from Devon, in September. On the hill-slopes, nd one example of Corimelana scarabaoides, which has also occurred to Mr. Waterhouse and myself at Carshalton, and used to be taken by the late dobertson near Gravesend; these being all new localities. The common us albomarginatus was, also, frequently to be seen; and succeeded in "taking in" nwary writer of these notes, who thought he had found a bug new to Britain, ne of the specimens he found had "the lateral margins of the pronotum wish-white," which they should have had, teste British Hemip. Of other plebeians dorus purpurcipennis (abundant at Wimbledon, on Ulex), Pentatoma baccarum, Podops inunctus were especially common. The Schoolmaster of the Hemiptera have been fearfully abroad in 1860, when the last mentioned bug was recorded be "Intelligencer" as confounded with some Casside; but I am afraid the ber of students of that order in the present year are not so numerous in this try as to justify us in much self-exaltation.

Of minor species, taken at random, and kindly named for me by Mr. Scott, I mention Scolopostethus contractus, Peritrechus nubilus, Trapezonotus agrestis, mus sylvaticus, Zosmerus capitatus, and Monanthia cardui and costata; none of m, save, perhaps, the last, worth the trouble of recording.

In the Hymenoptera, I found a specimen of the very curious and (for a Chalcis) ge Brackymeria flavipes, when sweeping on the hill-slopes above referred to.—ID.

Notes on Nematus pedunculi, Hartig ("Blattwespen und Holzwespen," p.
—In July of the present year, my friend, Mr. H. W. Kidd, sent to me
Godalming, a large batch of leaves of Salix cinerea, bearing on the und
numerous slightly pedunculated pubescent galls of about the size of a large

Their colour was throughout of an uniform green, a shade paler than the itself, and they preserved this green tinge unaltered until the larvæ left. They were placed principally in rows of two or three along the main ribs.

The base of deeply seated specimens protrudes sometimes through the cuticle, in which case it alone assumes a red tinge.

Each gall was tenanted by a single saw-fly larva, lodged within a cavity a equal to the size of the gall.

When about a line and a-half long, the larvæ were whitish-green, their dark brown with a black spot each side, within which the eye was situated.

At 7.30 p.m., on the evening of the 10th July, I noticed a full-fed larva let one of the galls.

It first showed its head through a round hole just gnawed,\* and scarcely enough to get through. Gradually segment after segment was with diff worked out, a strong internal pulsation forward being perceptible all the The freeing of the last two or three segments seemed to give it the most tro as it rested repeatedly for several minutes after each effort. Why the hole was previously enlarged enough to admit of an easy and quick exit, I do not underst except on the supposition, that, when it is sufficiently large to pass the head larva's instinct prompts it to force its way out without delay, even with a inconvenience.

It took the larva in question about fifteen minutes to emerge, and, when of the gall, it rested, extended to its full length (3") for about seven minutes.

was now of a dull olive colour, the head dull pale brown.

Subsequently it became restless, and began to perambulate without intention the interior of the jam-pot and the surface of the layer of earth therein tained.

Within a week's time a great number of companions gradually made the appearance, all displaying the same restless disposition, wandering day and make about their prison. But only very few burrowed and spun their thin coffee-brococoons of the size of a grain of wheat under-ground. The majority made attempt to construct cocoons, and gradually died above ground, attacked by so insidious disease. For symptoms of this ailing, I took their becoming lazy, the immobile, stiff, and their assuming a dull reddish hue. When this change occurred that the symptoms of the stiff and their assuming a dull reddish hue.

Warned by this failure, which may perhaps be attributed to the close confinent and the dampness of the earth supplied, I separated a few still inhabited ga from the rest, and placed them in a large chip box without any earth. When t larvæ of this batch came out, the same impulse of wandering about was show but opening the box a few days afterwards, I found they had all disappeared.

I turned the leaves out of the box, expecting to find the cocoons attached

<sup>\*</sup> In this respect, this larva has a different habit from others of the genus, which long before the final exit, keep a hole open for the discharge of "frass." and an accessional processional proces

es, but none were to be seen; so, knowing that an escape had been im[ carefully began to examine gall after gall, when it soon turned out that
 them were filled with the closely packed cocoons, divided only by walls,
 of frass intermingled with silken threads to keep the fabric together.
 of their usual resources, the sagacious creatures had crowded together in
 the most capacious galls, and spinning (against their custom) gregariously,
 their own frass as a substitute for earth.

few perfect insects bred from Mr. Kidd's batch appeared 4-6 weeks after their cocoons. They liberated themselves in the usual way, by cutting up of the cocoons with their mandibles.

868, I collected a few of these galls near Penge, as late as October the 9th; a were full-fed about the 16th of the same month, but died in their cocoons. It is very likely that the autumnal brood passes the winter in the cocoon the fly appearing in spring. At the present time, the galls in all stages at tiful in this neighbourhood.—ALBERT MÜLLER, South Norwood, S.E., ember, 1869.

the examination of living gall-midges.—The circumstance, that the minute of Cecidomyia are peculiarly liable to shrivel up, and to change their soon after death, particularly if the latter be brought on by artificial and leans, necessitates their examination whilst alive, as most of the published tions, and very properly so, are drawn up from such specimens.

t, on the other hand, their great vitality and restlessness present considerstacles to the observer who attempts doing so.

ter several unsuccessful experiments, I have accidentally hit upon a simple thich allows one to examine these delicate insects closely, whilst alive, and at me time renders them immobile, as far as head, antennæ, body, halteres, and

e concerned.

y exposing them to the seent of "Eau de Cologne" (and I find that anything
er will not do), and, of course, without wetting them at all, they lose after
minutes the power of moving their limbs; the wings alone are lifted up and
to vibrate rapidly, so much so as to become almost invisible.

his state lasts about twenty minutes, during which time every other part is and still, the sexual organs being generally much protruded, a matter of no importance in the separation of closely allied, yet distinct species.

Semasia obscurana, a gall inquiline.—There having been some doubt as to the tity of the Tortrix bred by Mr. C. W. Dale from oak-apples, as recorded by him the November number, p. 146, we requested that gentleman to allow us to examine which he obligingly did. It appears to be a small starved example of Semasia turana, Steph., a somewhat rare species, generally found among undergrowth

in woods. With reference to this, we ask our readers to compare the late Se von Heyden's Note on his Grapholitha gallicolana, in the Stettin. Zeitung for p. 118 ("Entomologist's Annual," 1868, p. 41). An examination of a type gallicolana (which was bred from oak-apples) induces us to think it may only climatic form of our obscurana. Mr. Dale bred his specimen on the 23rd of from oak-apples collected in the spring, near Sherborne. Obscurana occur Darenth, and we hope some of our metropolitan entomologists will collect apples there next spring; but the insect probably frequents all oak-woods, will become common now that something is known of its habits.

Dr. Rössler states that the larvæ of gallicolana live through the winter in old and dried galls of Cynips quercûs-terminalis which are firmly fixed on the to fyoung oaks, and that severe winters seem to be fatal to them; after a winter, nearly every gall collected produced one or several of the moth.—Eds.

Notes on Psychide.—Bruand's name of anicanella is very apt for that spe as the  $\mathcal Q$  has the anal tuft of a snowy whiteness. In the  $\mathcal Q$  of salicicolella? part is not altogether so white, particularly beneath, but it has a white bloot the sides. The anterior wings of the  $\mathcal J$  of the last species are much elongate fact very different from any other I possess. The  $\mathcal J$  anicanella, on the contramuch resembles in appearance specimens of our intermediella and roboricolella.

Judging by Bruand's description in his Manual, surely these two last are named in our collections, as he describes the  $\varphi$  of the first to be much light coloured than crassionella, whereas our intermediella  $\varphi$  is by far the darkest of we have, and he describes the  $\varphi$  of roboricolella as having a white anal tuft: that it brown.

In all probability, the mistake has arisen from male specimens only have been sent to the Continent to be named; without the cases and females in a firstee, it would surely be impossible to determine a species.

Males of intermediella copulated most readily with females of roboricole and vice versa, but I could not get males of anicanella to take to any females those of its own species, and then only towards evening (the other species copula at any time, even in broad sunshine).

It seems to be of a much more sluggish nature than the rest, more near allied, as its case proclaims to Pysche fusca, which flies most at dusk.

Anicanella I discovered for the first time this season, although I have work our woods nearly 30 years.

I wish entomologists in other localities would interest themselves more withis little genus; but I am afraid its friends are few.

I have the young of three species now feeding on the trunk of an apricot my garden, and growing capitally, but they are mixed.—Robert Mitfol Hampstead, N.W., September 8th, 1869.

Life history of Emmelesia unifasciata.—I am indebted to Mr. J. Bryant f the specimens which have enabled Mr. Buckler and myself to work out the ear stages of this species, which had long eluded our investigations.

I have taken the image at gas-lamps here in Exeter, and have several time had eggs sent to me; and amongst other plants. I have supplied the record lambda. t now proves its proper food, namely, Bartsia odontites; but, owing to the vith which this plant, when plucked and put in water, decays and becomes, I had always failed to rear them. In 1862, Mr. Buckler received from nd, and figured, a larva now proved to belong to this species; but, as it, the figure remained un-named, and nothing could be said about it.

he second week of last September, Mr. Bryant sent Mr. Buckler eggs by captured specimens of unifasciata; and, on being instructed by him look for, found that Bartsia odontites was growing plentifully in the in which the moths were taken; when, therefore, the eggs came on to termined not to confuse the larvæ with a number of food-plants to pick ose from, but put them at once on a potted plant of Bartsia. This was optember 14th, and, unfortunately, I was not able to devote much attention till the beginning of the present month, when (October 4th) to my disound the plant dead and decaying. However, a careful search enabled me t a solitary survivor crawling about on the damp rotten seed-pods, so I now that there was no longer a doubt about the food-plant; and finding field, which had supplied me with it here, had just been ploughed up, I pply at once from Mr. Buckler. The seed-pods on the sprigs he sent me ginning to ripen, so partially opening one of them, I placed my little larva nd soon saw it hide itself within. I now left it undisturbed for a week, t for granted that it was going from pod to pod, and feeding up well; at nought I would look for it, and, after opening several pods as carefully as e, found it stowed away in one of them; but, instead of being increased in ooking shrivelled, and much thinner than when last seen. This was disting; but, taking comfort at the thought that more tender diet might suit it I asked Mr. Buckler to get some of the greenest pods he could find, and scovered that they were just what was wanted. On October 16th, I found va in the act of moulting within a seed-pod, and, after this, its last moult, a shange took place in its appearance and manner of life.

bout this time, too, Mr. Bryant, having, at Mr. Buckler's instigation, searched lly the Bartsik plants in his locality, found several larvæ feeding at large; sthose which he kindly sent to Mr. Buckler exactly corresponded with the one reared, there was no difficulty in identifying their species; and from these ier, with my own solitary specimen, the following account and descriptions seen drawn up.

the egg is laid in August, and larva soon hatched. Perhaps it feeds first inside the egg is laid in August, and larva soon hatched. Perhaps it feeds first inside towers of the Bartsia, but, at all events, we know that, whilst young, it lives in the un-ripe seed-pods, which it enters by a hole in the side, remaining in until all the seeds are consumed, the frass at the entrance hole alone shows whereabouts. After its last moult, it no longer hides itself, and seems to no difficulty with the ripening capsules and seeds, still making a hole as e, in the side, and inserting its head and front segments as far as it finds it sary to get at the seeds, all the while holding on with its prolegs to the stem de. It seems to become full-fed towards the end of October, and goes just in the surface of the ground for pupation.

The simultaneous change of habit and ornamentation at the last moult is very resting, but I will leave wiser heads than mine to determine which is the e of the other.

The eggs were too far gone for description when I had them. The m hatched larva is exceedingly small, yellow in colour, with a dark head. A wards it becomes paler, of a yellowish-white, and is to look at like a small man

On October 14th, just before its last moult, I made this note of its appear Full 4-inch long, and plump, but able to stow itself away in a Bartsia seed tapering towards the head, and not so much towards the tail; the skin smoot glossy, the usual dots very minute, but distinct, being dark; the ground-uyellowish-white; head dark brown; plate on 2nd segment pale brown; a so pale-brownish plate also on 13th segment, which looks darker from the tuben dots on it being black. On a very close inspection, one can trace the course of lines—soon to be developed distinctly, but they cannot yet be described as planoticeable.

Immediately after the last moult, its appearance is much prettier than at other time, the ground-colour being of a pale delicate buff, and the lines clear and almost black; but this contrast is soon lost, the ground becoming da and dingier, and the lines paler and more diffused.

When the larva has become full-fed, the length is about half-an-inch, figure stout, somewhat flattened; the segments 4, 3, and 2, tapering ra rapidly; the head still narrower than 2, and round in shape; half the 2nd ment scale-like and shining; the hinder segments also taper to the tail; the is rough and wrinkled; the tubercles dull white, furnished with short dark br hairs: the ground-colour varies in different individuals-being greyish-yell greenish-grey, greyish-brown, or brown; the dorsal line blackish, beginning very on the front of each segment, thickening towards its end, and slightly interrupted the fold; the sub-dorsal line more or less visibly continuous according to the de of the ground colour, and may be described as a line of stout blackish dashes pla at the folds, sometimes connected by brownish streaks which fade away into ground-colour about the middle of each segment; on segments 10 to 13, the do and sub-dorsals unite to form a darker smoky streak, which tapers away to a po at the anal extremity: below the sub-dorsal comes a brown wavy line; the spi cular region is brownish above and more yellowish-white below, these colours being definitely separated by a line; the black spiracles are placed in open spa of the paler colour: at the 10th segment, the lateral lines fade away into the p colour, thus forming a strong contrast to the united dark lines on the back; bel the spiracles comes a clearly defined stripe of dark brown, followed by a broad one not so dark; the belly varied with yellowish and pinkish-white, with two distinctly darker lines along it; the head and collar yellowish, the dark lin passing through them as freckled stripes .- J. Hellins, Exeter, October 25th, 186

Description of the larva of Chilo phragmitellus.—On February 12th, 1869, received from the Rev. J. Hellins, two larva of this species, and on the 28th, sommore of them from the Hon. T. de Grey, in stems of Arundo phragmites, eith hybernating or feeding (perhaps) on the knots inside. Early in April, I found on that had escaped from the stems, very actively crawling about.

The larva is three-quarters of an inch in length, cylindrical, and tapering very little behind; the segmental divisions deeply cut: each segment with on one sub-dividing and deep wrinkle.

ground-colour of the back is pinkish-grey or pinkish-brown, the sides ur, and the belly white.

dorsal line very thin, is dark greyish-brown or pinkish-grey; the subripe is of a similar colour but a little paler; the spiracular lines a little and paler, though on the thoracic segments it is not linear but blotchy; appracular line is thinner still and of the same pinkish-grey colour; the prownish-grey or pinkish-grey, with an ochreous tinge, having the large of the mouth blackish; on the back of the second segment is a pinkishten semi-circular plate, and another on the anal tip; the small tubercular dark brown, each having a fine bristle of the same colour; the spiracles

vious to pupation, the larva gnaws an oval hole from within at the side of I, and covers it carefully with silk and bits of dry reed, so as almost to conceal it, and which serves as an outlet for the moth.

pupa is three-quarters of an inch long, moderately slender, and of nearly bulk, tapering only at the two last abdominal segments; the anal extremity and fringed with a circle of small hooks; its colour is a pale ochreous-brown, thittle polish. The moths emerged on June 4th to July 2nd.—WM. Buckler, th.

tes on the larva of Acronycta alni.—A friend, who took a larva of this ast summer, in Herefordshire, has communicated to me some curious facts ng it, with permission to make what use of them I pleased. With a view re, of encouraging the search for this larva, so widely distributed, yet so send the following particulars:—

the larva was taken on alder, the 17th of July, and was not recognised as alni, being then black and whitish-grey, and resembling a piece of birds' (this comparison, it will be remembered, has been used before for this

After changing its skin, it showed clubbed hairs, and was recognised. It all hours, by day as well as by night, resting on the upper-side of the leaf, as very easily dislodged. It was sluggish, and drank freely. Surely this may explanation of so many having failed to induce this larva to feed in confinition wanted water. When about to change, it nibbled a large hole in a piece k, and, fastening the fragments together, framed its cocoon, and became a pupa, with the abdominal segments rather long and pointed.

the larva was beaten in the usual way with umbrella and stick. It was flered water till it got sluggish, and seemed preparing to change, when a bath given it, which "assists some larva in changing their coats." At eriod, it rolled about, if disturbed, in a loose half-circle, speedily returning to hight position. After changing its skin, it grew rapidly, and drank several drops of water daily. As these were sprinkled on the leaves, it moved its from side to side, and drank very quietly. At this time it was isolated, and the choice of several sorts of leaf. It ate a little lime and a little oak, but at first: afterwards confining itself to small alder leaves, at the lower end of a shoots. There were several large oaks close to the alder hedge; also apple, and nut in rear of the spot, where it was taken. The last moult was about 22nd of July, and it turned to a pupa the first week in August. After changing kin, it did not eat the cast-off coat, but left it on the upper-side of a leaf.—

NARD SMITH, Marlow, November 27th, 1869.

Abnormal second brood of Selenia illustraria. — Since my communication last number respecting lunaria, a still more remarkable aberration has occur with the above insect. A friend sent me a few larvæ, last spring, from which had about half-a-dozen pupæ. To my great disappointment, these did not probe the summer insect, and I supposed them to be dead. In the last week, how of November, a female appeared. This, in itself, was strange enough; but, when sa far more remarkable, it was not of the summer form.—J. Greene, Apa Road, Redland, Bristol, December, 1869.

[We can share Mr. Greene's surprise at his insect not proving of the summ form.—EDS.]

Note on Morayshire Lepidoptera.—In the editorial note to my friend, it Norman's list of Noctuæ at Forres, there is the following remark: "The probabilitions of that district are evidently of a less boreal nature than are those of Renoch." Now with all due deference to the editors, I think that "less boreal should be replaced by "less alpine;" for, cæteris paribus, Forres has as moboreal species as Rannoch; otherwise the two places can scarcely be fairly copared—one, a high-lying, cold, inland district; the other, low-lying, warm (For is one of the mildest and driest places in Scotland), and maritime. And it is this maritime situation that I think Forres is indebted for its southern specifor taking the case of a common fern (Scolopendrium vulgare) and a common lambluse (Helix aspersa), we find that, although found throughout Britain, yet the northern provinces they only occur near the sea (see Watson's Cybele, vol.

. 283, "the tendency of plants to linger along the coast-line to a higher north latitude than that at which they will exist in inland situations"). Thus, I that that many of those southern species which appear to be isolated at Forres we be found at other parts (if otherwise suitable) of the northern coast line; e.g., two southern species (not yet found at Forres) whose occurrence on the coast Forfarshire I now record.—F. Buchanan White, Perth, December 7th, 1869.

Lepidoptera new to the Scottish lists.—Leucania littoralis and Heliothis m ginata, not hitherto recorded as Scottish, have been taken this summer by Mr. Bruce, on the coast of Forfarshire. Phycis subornatella, Dp., has been taken uncommonly near Perth, both last and this summer by Mr. W. Herd. My deternation of this local species has been kindly corroborated by Mr. Doubleday.—In

Pædisca oppressana at Norwich.—I have stumbled upon a new locality Pædisca oppressana on some poplars not a quarter of a mile from my house, I only took two specimens; it seems very scarce. Perhaps the ground is alrest occupied, as Spilonota neglectana and aceriana abound on the same trees, where Sesia apiformis has honeycombed the bark and roots.—Chas. G. Barrett, Norwi 16th November. 1869.

Occurrence of Xylina conformis and Dasycampa rubiginea in Monmouthshire. I send you this, to tell you that Mr. T. Philipson, of Newport, Moumouthshi has taken Xylina conformis at sugar on October 2nd, in that county, and a friend his took another example a few days previously. On the 17th November, he to Dasycampa rubiginea, settled on the trunk of a tree.—WM. Buckler, Emswor 25th November, 1869.

on the scarcity of Lepidoptera in 1869.—I have been unable to work well ; but, independently of this, the past season appears to me to have been a one for Diurni and Geometre. Of Noctue I cannot speak, as my health llow of my sugaring. All the butterflies, except the Lycenidæ, have been Some of the blues, as Arion and Argiolus, have been unusually abundant, are about the only exceptions to the general scarcity of Diurni. A Geometric pest, M. fluctuata, has been quite scarce this season, and even far from common, compared with its usual abundance.

fact respecting the time of appearance of certain species may be worth Last year, S. tipuliformis was out in my garden on June 5th and 6th, and Arion on the next day. This year, I first saw Arion on June 13th or 14th, the clear-wing was not out at all until the last week in June; I think the the first seen, and yet I watched most carefully for it. This shows only difference between early and late seasons for the Lycena, and three weeks Sesia.-HERBERT MARSDEN, Brook Street, Gloucester.

otures of Lepidoptera in Gloucestershire in 1869.—L. Arion, Cotswolds, near ter, much commoner than usual, about June 15th; T. W-album, three or d; A. Atropos, a few pupæ in October; M. bombyliformis, not uncommon May; S. myopæformis, bred, from apple bark, July; P. Geryon, Cotswolds, loucester, common, May; B. abietaria, Cotswolds, near Gloucester, not n, July; A. emarginata, usually a scarce insect here, but took several, ; Eup. satyrata, only one specimen, where last year they were very n, Dursley, June; Eup. subnotata, a few in the suburbs, new to the ; Eup. isogrammata, a few worn ones flying over clematis, August; C. s, one bred from pupæ dug last autumn, May; X. semibrunnea, four at ivy, r; E. anguinalis, Cotswolds, May, scarcer than usual; Botys pandalis and alis, as usual, pretty common in beech-wood openings on the Cotswolds.—In.

aptures of Lepidoptera, &c., in 1869.—The following is a list of some of the opterous insects I have taken, noticed or bred, during the past season. The I species to which Lytham is given as the locality were captured on Whitay and Whit-Tuesday, May 17th and 18th.

- w-album: bred a fine series; larvæ from Doncaster.
- glossa stellatarum: I noticed this species on the cliffs at Scarborough, in July. na lonicera: on the cliffs at Filey, in July, the former species in profusion.
- nia plantaginis: in the larva state; Norland moors.
- a fuliginosa: larvæ on the sand-hills at Lytham.
- scelina: larvæ on the sand-hills at Lytham, but not so commonly as I have noticed them in previous years, on other parts of the Lancashire coast.
- atiqua. a larva brought to me from near Mirfield; this insect, though so abundant in most localities, seems to be a scarce species here.
- byx quercus: larvæ common on the sand-hills at Lytham.
- allunæ: common, Greetland moors and Linthwaite.
- rmia perfumaria: larvæ on ivy at Golcar.
- lalia inornata: bred; larvæ from London. Before hybernation they feed on knot-grass, afterwards on dock.

Scodiona belgiaria: common on the Greetland moors; larvæ by sweeping the be in April, imagos at rest on the ground in June.

Cheimatobia boreata: a few larvæ by beating birch on Black Fir Wood.
Eupithecia albipunctata: bred; larvæ from Coombe Wood, London.

E. frazinata: larvæ rather freely by beating ash in August. Dirkby.

E. tenuiata: bred a good series; pupæ from Perth.

Odontia dentalis: reared a good series; cocoons from St. Leonard's-on-Sea.—6 T. Porritt, Huddersfield, 12th November, 1869.

[We imagine that few believe in Boarmia perfumaria, as distinct from rhom daria. The story of its having been bred from a peculiar form of larvæ, feel upon ivy, has been proved to be utterly mythical. The "very smoky" north varieties of many species are not generally considered distinct.—Eds.

Captures of Lepidoptera.—Near Battle.—May 16th, Ephyra orbicularia, one of gas lamp; 21st, A. fuliginosa; 24th, T. culiciforme, on a bush; 31st, E. decolo and Eup. plumbcolata. June 1st to 5th, C. or and P. palpina, one specimen of effying round poplar, F. piniaria, round pines, common, Selenia lunaria, one obush; 7th, Lobophora sexalata, one beaten out of sallow; Harpella Geoffrella abundance; 15th to 24th, Heliodes arbuti, Arctia plantaginis, Eup. albipund and Macaria notata. July 17th, Lithosia mesomella and Cymatophora duplaria dusk; 26th, Herminia derivalis, one by beating, Aventia flexula, P. syringaria, P. bajularia, one of each, E. flammcalis, C. miniata, and L. complana, a few of eff. P. glaucinalis, one in a window. August 1st, V. polychloros, two specimens; 16 A. porphyrea; 22nd, Aplecta advena. September 6th, Ennomos tiliaria and popularis, on gas lamps. October 8th, Ennomos fuscantaria and Eubolia cervino n lamps.

Near Lewes .- Insects at sallows very scarce; my best capture was gracilis. April 10th and 12th, Lobophora polycommata, on hedges after da 25th, E. venosata, bred from pupa dug; 31st, P. vitalbata, over elematis, P. terso over clematis. June 11th, T. extersaria, at sugar; 20th, Crambus chrysonuchell 22nd, C. fluviata, one, flying at dusk; 24th, A. aceris, bred. July 6th, A. Atrop brought to me by a friend, I suppose an hybernated specimen; 7th, M. galiata procellata, and Eup. venosata, flying at dusk; 13th, M. miniata and Endotri flammealis, also Herminia derivalis, ten specimens, flying about 10 p.m. T friends also took several at the same time; 15th, Crambus falsellus and Pyro glaucinalis, over thatch. August 5th, Lithosia griscola, by beating; 10th to 21 A. Atropos, larvæ brought, heard of between 20 and 30; 12th, Botys flavalis a G. obscurata, common; 16th, P. stratiotalis and P. vitalbata, on gas lamps; 28 Hepialus sylvinus, at dusk. September 6th, S. convolvuli, several specimens ha occurred in this neighbourhood; 7th, E. tiliaria, on gas lamp; 8th to 20th, australis, by searching grass and on sugar, common; 8th, L. cespitis, sevel specimens; 21st, A. saucia, on sugar. October 1st, X. aurago, one, on ivy; 4th 14th, P. empyrea, on sugar and ivy, several specimens; 5th to 14th, A. saud rather commonly; 4th H. armigera, one specimen at rest in the town; 6th, fluviata, one, on a gas lamp. November 3rd, P. cassinea and H. pennaria, on g lamps .- J. H. A. JENNER, Lewes, November 9th,

tures of Lepidoptera at St. Ives, §c.—I have taken, during the prst season, wing, among other insects:—Thecla pruni, Steropes Paniscus, Acherontia (commonly), Gastropacha quercifolia (commonly), Epionevespertaria (one §), s fuscantaria (one larva), Eupithecia consignata (one), Cerura bifida (com-Clostera reclusa (commonly), Simyra venosa (larva commonly), Agrotis commonly, but not before observed here), Cirrhædia xerampelina (several), oo (two, at sugar), Epunda nigra (commonly), E. lutulenta (at sugar), mpa vetusta (commonly), Xylina semibrunnea (seven, at sugar) and Catocala more common than usual). Chærocampa Celerio has been sent to me by a from Middlesborough, who took it at rest; one other was taken.—19ER, St. Ives, Herts, December 9th, 1869.

# Rebiew.

HE ANIMAL WORLD; a Monthly Advocate of Humanity. Parts 1 and 2.

m: S. W. Partridge & Co. Published for the "Royal Society for the Preventorulety to Animals."

On receiving from the Society two parts of their new publication, with a st that we would notice it, we had, at first, serious misgivings that we should herein some dreadful agitation against entomologists generally, as opposed to brinciples advocated by it, but were much relieved at finding that not only naturalists not condemned, but even indirectly complimented. And so it id be. Of all men, a true naturalist is the least likely to transgress any of noble principles so well and ably held up by this—we say it emphatically—most christian in its objects of all existing societies, whether religious or other.

The Magazine is admiraby got up, and is published at a price that places it in the reach of the humblest cottager; the illustrations we have seldom seen bassed for fidelity; and the full-page reproduction of Mr. H. Weir's "Churchyard armer" is really excellent.

ENTOMOLOGICAL SOCIETY OF LONDON, 15th November, 1869.—H. W. BATES, 1, F.Z.S., President, in the Chair.

D. J. French, Esq., of Chatham, and C. S. Websdale, Esq., of Barnstaple, were cted Members; S. G. Barnes, Esq., of Birmingham, N. E. Brown, Esq., of Reite, E. M. Janson, Esq., of Chontales, Guatemala, O. E. Janson, Esq., of Highgate, H. Pearson, Esq., of Birmingham, and W. D. Robinson, Esq., of Dalbeattie, are elected Subscribers.

Mr. F. Smith exhibited, on behalf of Mr. E. Brown, a locust, several specimens which had been recently taken at Burton-on-Trent (this has since been identical as Acrydium peregrinum, Oliv., a native of Asia and North Africa, but not itherto found in Europe). Mr. Smith also referred to a paper by Mr. Andrew furray, in the "Annals of Natural History," respecting the habits of Rhipiphorus, a which Mr. Murray stated that, according to his opinion, the insect was an equiline in the wasp's nest, rather than a parasite. Mr. Smith combated this opinion, and exhibited numerous larvae of Rhipiphorus, received from the late Mr.

Stone, some of which had their heads embedded in the wasp-larvæ in the act sucking the juices.

Janua

Mr. Pascoe exhibited numerous new species of Heteromerous Coleoptera fin Australia. One species of Sargus was remarkable, inasmuch as it was alwa covered, even when living, with a floccous substance, which had been declared be the immature state of a fungus (Sphæria).

Mr. Briggs exhibited Deiopeia pulchella, captured recently by him Folkestone.

Mr. Davis exhibited numerous preserved larvæ, including a case illustrati

Mr. Müller stated that Cynips lignicola emitted, when handled, a strong a disagreeable odour, and he thought that this might partially account for its rap spread in this country, the odour possibly rendering it distasteful to birds, &c.

Mr. Dunning made some observations respecting a swarm of Syrphi he h noticed at Walton-on-Naze, in Essex, last autumn. Mr. Verrall had examined so of the specimens, and said there were six species.

A discussion then took place respecting the enormous number of Syrphi a Coccinellæ noticed last season, especially with reference to the supposed migrate powers of these latter. The general opinion of the Meeting was, that there were no necessity to suppose immigration to have taken place, as the larvæ were me extremely abundant a short time before the appearance of the swarms of the perfection of the swarms of the perfection of the swarms of the perfections.

Mr. Bates read a paper on "New genera and species of Coleoptera, fre Chontales, Nicaragua."

Mr. Baly communicated new genera and species of Hispida.

Mr. Salvin read a "Synopsis of the Rhopalocerous genus Clothilda."

6th December, 1869. H. W. BATES, Esq., President, in the Chair.

M.M. d'Emerich, De Marseul, and Oberthür were elected Foreign Member Capt. A. M. Lang, of Brockham, near Reigate, W. A. Lewis, Esq., of The Temp J. C. Melvill, Esq., of Manchester, and Howard Vaughan, Esq., of Chancery Lan were elected Members.

Professor Westwood exhibited drawings of several very large species Chalcididae, and of new genera and species of Pselaphidae,

Mr. F. Smith exhibited a larva-case which he supposed to belong to a speci of Oiketicus, found by Mr. J. K. Lord, in the plains of Sinai, on the san where the only vegetation consisted of low plants; also a mass of earth-cell formed by a species of Halictus, near Cairo; these penetrated the sand to the distance of a foot.

Mr. Jenner Weir exhibited Heliothis armigera, bred from larvæ feeding in the fruit of the Tomato, in Spain or Portugal.

Mr. Müller exhibited a photograph of an example of Pterostichus Prevosti from Switzerland, with two supernumerary hind-legs.

Mr. McLachlan communicated "Notes on Boreus hyemalis, Linné, and I Westwoodii, Hag." PECIES, &c., OF HEMEROBIINA-SECOND SERIES (OSMYLUS). BY R. M'LACHLAN, F.L.S.

ne insects noticed in this series all pertain to Osmylus, with one on, for which I have thought it necessary to institute a new

One rather important fact has struck me, when examining nsects, viz, that in most of the species (perhaps all, excepting uropean O. fulvicephalus) the claws are toothed internally, or

he following is a concise tabular arrangement of the more closely genera:-

elli desunt......polystæchotes, Burm. Ocelli adsunt.

-Area costalis serie areolarum unică.

b .- Tarsorum plantulæ simplices. Area sub-costalis venula transversa basali ......osmylus, Latr.

b.b. - Tarsorum plantulæ bifidæ vel lunuliformes.

c.—Area sub-costalis venula transversa basali... stenosmylus, McL.

c.c. - Area sub-costalis venulis transversalibus

plurimis .....porismus, McL.

a .- Area costalis seriebus plurimis (ad basin 5) The genus  $\mathit{Myiodactylus}$ , Brauer, is placed in the family  $\mathit{Nymphidae}$ 

ccount of its filiform antennæ. The now described species of the above-named genera are as

WS:--TSTECHOTES. - punctatus, F. (N. America); vittatus, Say (N. America).

YLUS.—fulvicephalus, Scop. (Europe); multiguttatus, McL. (Asia Minor); conspersus, Walk. (India); lineatocollis, McL. (India); Langii, McL. (India); pubicosta, Walk. (India); tuberculatus, Walk. (India); interlineatus, McL. (India?); and inquinatus, McL. (Ceram).

NOSMYLUS.—tenuis, Walk. (Tasmania); stenopterus, McL. (Australia; incisus, McL. (N. Zealand); pallidus, McL. (Australia); and (?) longipennis, Walk. (Australia).

RISMUS.—strigatus, Burm. (Australia).

POSMYLUS .- punctipennis, Walk. (India).

# OSMYLUS MULTIGUTTATUS, n. sp.

O. niger, nitidus. Pedes flavi; tarsorum articulis 1-4 ad apicem,

ultimoque toto, nigris; unguibus piceis, intus serratis. Alæ albido-hya confertim nigro-guttatæ, venis plerumque pterostigmateque flavo-albid Long. corp. 5-6'''; exp. alar. 19-20'''. Hab. Trebi

In mus. auctoris, necnon Dom. De Selys.

The whole body, including the antennæ, eyes and occlli, intensely black head much polished, the other parts duller; abdomen clothed with moderately cinereous hairs, especially at its apex. Head with the crown very convessulcated in front, the occlli prominent; palpi piecous, the terminal joint tipped black. Legs yellow, moderately pubescent; the coxæ, four first tarsal joints apex, and the last joint entirely, black; claws blackish piecous, stout, finely sen internally; plantule simple.

Wings broad, the apical margin rounded; whitish-hyaline, thickly covered large and intensely black spots. In the anterior wings there are about 25 more or less rounded spots, some of those on the costa being confluent, and forming transversely elongate, cuneiform dashes; the margins are regularly spot the disc with two irregular longitudinal rows, those placed on the two row gradate veinlets often united into interrupted transverse streaks; in the posts wings the discal spots are less numerous. The margins (especially the coand all the veins are strongly ciliated with black. The longitudinal and most the transverse veins and veinlets in the basal half of the wings are whitish yel except where they traverse the spots, when they become black; most of gradate veinlets and of the longitudinal apical veins are black (but the first gradate veinlets in the outer series are white in the middle, even although they placed in the black spots); the sector about 10-branched in the anterior wings; pterostigmatical region in all the wings is slightly tinged with yellowish.

This beautiful and striking species was collected in 1869, Trebizord, by M. Th. Deyrolle. In structure it is much 1 O. fulvicephalus (chrysops, Auct.), but has shorter and broader win with the apical margin slightly rounded, instead of slightly excise hence the apex is less produced. The net-work of the wings is rath more open, and the series of gradate veinlets more parallel.

# OSMYLUS LINEATOCOLLIS, n. sp.

O. albidus. Caput fusco nigroque varium; antennis, labro, palpisq flavo-albidis. Prothorax albidus; suprà lineá mediá longitudinali, stri utrinque interruptá, punctisque quatuor nigro-fuscis: Meso- et meta-thora de latera anticeque nigro-fusci Abdomen brunneum, pilis flavis vestitu. Pedes pallidè flavi; unguibus testaceis, intus ad basin serratis. Alæ albayalinæ, punctis fuscis conspersæ.

Long. corp. 4"; exp. alar. 14\frac{1}{2}-15\frac{1}{2}".

In Mus. Brit.

Hab. India septen

Whitish. Crown of the head whitish, with a large cordate swelling, in whit is an irregular, transverse, blackish groove, and behind this a transverse, polishe brown ridge, dilated in the middle and at each end; front whitish, varied with

fuscous; labrum and palpi yellowish; antennæ pale yellowish, the basal patty fuscescent above. Prothorax whitish, about one-half longer than lightly narrower in front; above, with three transverse ridges, one in the and one at each end; a longitudinal line in the middle, which is dilated on res, an interrupted line on each side, and four dots, all blackish-fuscous; ackish. Meso- and meta-thorax whitish, broadly blackish-fuscous in front, ides, and under each anterior wing. Abdomen brownish, the sides of the ts margined with yellowish; terminal segment yellowish. Legs primrosewith concolorous hairs. Claws testaceous, the apical half simple, the basal rated internally, the serrations being nearly hidden in the plantula.

ings moderately broad, the apical margin slightly rounded, the apex acute; a hyaline, with sparsely scattered brown dots, especially round the apical ner margins, two or three at the pterostigma and one on the disk being than the others; in the posterior wings the basal half is without dots: ion rather open, varied with whitish and brownish; radius dotted with; ciliation for the most part whitish; the gradate series in the anterior nearly parallel.

There are three examples in the British Museum, varying slightly e number of the brown spots in the wings. The species is allied nspersus, Walker, but has fewer dark markings on the wings, and neuration in conspersus is almost entirely blackish, margined with the markings on the head and thorax are also differently naged.

### OSMYLUS LANGII, n. sp.

O. piceo-niger. Anntennæ flavæ, articulis duobus basalibus piceis. es flavi; unguibus intus serratis. Alæ elongatæ, sub-angustatæ, æ, vix falcatæ: anticæ flavidæ, punctis plurimis margaritaceis consæ; maculis tribus costalibus, nonnullis ad apicem, fasciaque irreguante apicem et marginem dorsalem strigas tres emittenti, fuscis; s venulisque flavis, nigro minutè punctatis: posticæ hyalinæ, venis ulisque plerumque nigris vel nigrescenti-suffusis.

ig. corp. 4—5"'; exp. alar. 17—20"'. Hab. India septent.
In Mus. Brit. et auctoris.

Pitchy-black, the head somewhat shining. Palpi piceous. Antennæ yellow, two basal joints pitchy-black. Eyes very large, black and shining. Ocelli dl. Prothorax rather short, the sides parallel; above, with three transverse and lines, one in the middle, and one at each end (forming raised margins), thed with sparse blackish hairs. Abdomen blackish above, somewhat ochreous leath. Legs yellow, with minute blackish points and short yellow pubescence; we serrated internally.

Wings long, narrow, acute, the apical margin very slightly excised, giving the ags a slightly falcate appearance: anterior wings washed with yellow, shining; the fuscous markings, viz., three large, somewhat quadrate, spots on the costa,

198 [Februa

several beyond these near the apex, and a large irregular band extending in near the apex and along the dorsal margin, emitting three broad streaks, one which enters the apex, and the two others reach the dorsal margin; beyond band, nearer the base, is a less distinct and somewhat quadrate spot on the dormargin, and there are also two small and distinct discal blackish spots, one in the base, the other in the middle; the whole wing is rather thickly sprinkled in pearly drops, being in reality portions of the membrane which have not acquired the yellow ground tint; in the fuscous band these dots are more distinct, a several of them are there much larger, forming large spots; neuration moderate open, the veins and veinlets yellow, with minute black points, from each of which springs a short blackish hair: posterior wings hyaline, all the basal veines a veinlets, and also the gradate veinlets, black and suffused with blackish; longitudinal veins between, and on each side of, the gradate series, whitish, we blackish points.

There is a specimen of this beautiful species in the British Muser and I have a long series before me, which I owe to the liberality Captain Lang, by whom they were collected at Masuri, in June.

#### OSMYLUS PUBICOSTA, Walker.

Chrysopa pubicosta, Walk., Tr. Ent. Soc. Lond., n. s., vol. v, p. 1

O. albidus. Caput thoraxque nigro-signati. Antennæ flavo-albi articulis duobus vel tribus basalibus piceo-nigris. Palpi piceo-annul Pedes flavo-albidi, tarsis testaceis, unguibus intus minute serratis. Alæ la ad apicem vix acutæ, albo-hyalinæ: anticæ area costali lata, ad basin j abrupte dilatata; punctis nonnullis basin versus, duobus pterostigma alibus, strigaque transversa irregulari ante apiecm, nigro-fuscis; verenulisque albis, nigro minutè punctatis, cum costâ ciliis longis instruct posticæ munctis duobus pterostigmaticalibus nigro-fuscis.

Long. corp.  $4-4\frac{1}{2}$ "; exp. 15-18".

Hab. India septentrion

In Mus, Brit, et auctoris,

Whitish, with a pale yellow tinge. Crown of head much inflated, wirregular blackish markings; front with blackish dots, and blackish lines at bas antennal sockets: palpi annulated with piceous: antennæ yellowish white, two basal joints (and sometimes also the third) pitchy black. Prothorax rat short, slightly broader posteriorly; above, with interrupted longitudinal black lines, and clothed with sparse but long yellowish hairs: mesothorax large, m inflated. Legs pale whitish yellow, and clothed with long concolorous hairs; apex of the tarsi testaceous, claws testaceous, curved, internally at about middle with two or three small and indistinct teeth.

Wings broad, sub-acute at the apex, whitish-hyaline with whitish veins veinlets; the costal margin and neuration longly ciliated: anterior wings with costal area very broad at the base, rather abruptly dilated (almost as in Ancylopte and Megalomus); markings few and blackish, consisting of a spot on each side the somewhat yellowish pterostigmatical region, the inner of which is the large

dots at the base of the wing and on the dorsal margin; veins and veinlets with small and distinct black points, from each of which springs a blackish st of the veinlets of the inner gradate series, some in the outer, and several use of the costal area, black; costal margin with pale ciliation, which long near the base; reticulation very open (transverse veinlets few):

The wings with a black spot upon each side of the pterostigmatical region;

The without black points; some of the gradate veinlets in both series blackish.

have re-described this insect, partly because it was erroneously by Mr. Walker in *Chrysopa*, and also because I have before me ine examples taken by Capt. Lang at Masuri in June and July, ng hitherto been unique. It is an anomalous *Osmylus*, and I am ry clear as to the existence of ocelli, which I believe are present, a certainly obscure. The species is best placed in this genus ionally.

# OSMYLUS INTERLINEATUS, n. sp.

D. griseo-brunneus, pilis flavis nigrisque vestitus. Antennæ flavæ.

pallidè flavi, tibiis anticis intermediisque extus nigro-tripunctatis.

modicè elongatæ, acutæ, griseo-hyalinæ; pterostigmate utrinque

notato, punctisque nonnullis fuscis; venis venulisque nigris, albo
; sub-costá, radioque albis, nigro-lineatis: anticæ areá sub-costali

dineatâ, margine dorsali puncto tuberculato fusco notato.

. corp., 5'''; exp. alar.,  $17\frac{1}{2}'''$ . Hab. Natalia? (India orientali?). In Mus. Brit.

arrid greyish-brown with yellow and blackish hairs intermingled. Antennæ v. Eyes grey. Prothorax stout, rather longer than broad. Legs pale yellow; for and intermediate tibiæ with three black spots externally, of which one is a middle, one near the base, and one near the apex.

Wings rather long, the apex acute, the apical margin straight; greyishne; pterostigmatical region with a blackish spot on each side, a smaller ish spot placed across two of the nervules of the outer gradate series, and or three more in the disc on the cubital region; on the inner margin of the rior wings at about one-third of its length from the base, is a rounded raised vex) fuscous spot with black veins: neuration for the most part black, but he here and there: sub-costa and radius in the anterior wings whitish, with six of long black spaces, and with black lines in the membrane in the sub-costal, one line being placed between each pair on the veins; in the posterior wings are five pairs of black spaces on these veins, and no lines in the sub-costal in the net-work of the basal portion of the wings is moderately dense; the late series not parallel but converging on the inner margin.

There is one example (not in good condition) in the British useum, indicated as from Port Natal; but, without being able to affirm

that it is so, I am rather inclined to believe that this locality is neous, and that the insect is, in reality, Indian. It is allied to ta latus and inquinatus (the next described species), differing from former in its larger sige, broader aspect, and in the lineated subarea; its differences from inquinatus are noted in the following parative diagnosis.

# OSMYLUS INQUINATUS, n. sp.

O. interlineato similis; sed alis sine punctis discalibus, anti areâ sub-costali, areaque inter sub-costam et radium, fasciis duabus bus, transversalibus, puncto inter fascias, strigisque duabus apicem a sordidè aureis, mox distinguitur.

Long. corp. 4"; exp. alar. 19".

Hab. C

In Mus. Brit.

This species, collected in Ceram, by Mr. Wallace, has the for interlineatus, but is apparently abundantly distinct in consequent the dull golden markings of the anterior wings.

O. tuberculatus, interlineatus, and inquinatus, are no doubt clallied; yet I cannot consider them as only forms of one species doubt not that more extensive materials will prove their specific v. Possibly also the raised spot of the wings, and somewhat different appearance, may eventually cause them to be generically rated from the other species of Osmylus. The claws in O. tuberculare distinctly bifid at the apex, and the same character doubtless ob in the two others; but the single specimens of each of these are not a condition for minute examination.

## Hyposmylus, nov. gen.

Caput parvum: antennæ breves; ocelli supra et inter antennarum positi; labrum paullo emarginatum; palporum maxillarum articulbasales breves, ceteri longiores, inter se æquales, ultimo acuto. Proth latitudine paullo longior. Pedes pilosi, unguibus crassis, valde cur plantulis simplicibus. Alæ amplæ: anticarum ared costali latâ; vecostales furcatæ, venulis obliquis plurimis, series areolarum plurimas fortibus, connectæ; sub-costal et radio ad apicem confluentibus; area sub-cost venula una ad basin solum instructa; sectore et radio parallelis; ar discalibus per-numerosis; venulis marginalibus furcatis; area post-comulti-areolata: posticæ fere ut in anticis, sed area costalis angustata, areolarum unica.

This genus is formed for the reception of Osmylus punctiper Walker, and differs especially from Osmylus (as here restricted) in costal veinlets being united so as to form several irregular rows of si cellules.

# HYPOSMYLUS PUNCTIPENNIS, Walker.

smylus punctipennis, Walk., Tr. Ent. Soc. Lond., n. s., vol. v, p. 183. I. brunneus. Caput testaceum, super antennas flavum. Antennæ eæ. Pedes flavo-brunnei, flavo-ciliati; tarsis obscurioribus. Alæ o-hyalinæ, venustè micantes: anticæ punctis nonnullis ante apicem; sub-costâ et radio flavis, reliquis venarum venularumque flavis, variis; spatio pterostigmaticali flavido, obsoletè fusco-notato.

corp. 6"; exp. alar. 24-28". Hab.: India septentionali.

In Mus. Brit. et auctoris.

ale brown. Head testaceous; crown much inflated, but with an abrupt ity above the antennæ which is occupied by a yellow transverse space, in are situated the ocelli, which are very small, and placed closely together in ngle; the posterior portion of the head, partly below the eyes, shows two oval tubercles, one on each side. Antennæ and palpi pale brownish.

Lyes somewhat plumbaceous. Thorax above with sparse, but long, testaceous Abdomen fuscous (colours probably altered), clothed with testaceous hairs; ust segment entirely testaceous and provided with two large oblique approxing valves ( $\delta$ ?). Legs yellowish, with yellow hairs; the tarsi somewhat ar; the claws shining brown.

Wings long and broad, acute at the apex; hyaline with a testaceous tinge, and beautiful blue, purple, and golden reflections; the pterostigmatical region wish with indications of fuscous dots; sub-costa and radius yellow; most of other veins whitish, but many of the transverse veinlets fuscous; the margins veins longly ciliated with yellowish hairs: in the anterior wings are several one dots on the outer series of gradate veinlets, and a smoky corneous dot in of the discal cellules near the middle; the cellules in the costal area irregular; discal cellules very numerous, but leaving a very broad marginal space.

Of this large insect I have seen but two examples—Walker's type, the one given to me by Captain Lang, by whom it was captured at nawur.

Limes Grove North, Lewisham, S.E., December, 1869.

# HINTS ON PRESERVING LARVÆ. BY H. PRYER.

Some two years ago, seeing some preserved larvæ in the possession Mr. Boud, I became desirous to know the method by which they are prepared; and, after a good many experiments, I attained success. lieving that there are many others who would like to be informed of a modus operandi, I have pleasure in giving them the result of my perience, as follows.

Having procured a larva, immerse it in a solution of alum or pyro-

ligneous acid for a short time; then gently squeeze the inside out, or between pieces of blotting paper, taking care not to tear or en the anal orifice. After having extracted all the moisture and intes insert in the aperture a bent glass blow-pipe, having a bulb in the dle, and inflate the larva over a spirit lamp, having a flat pie zinc fixed over the flame. Holding the tube so that the larva doe touch the zinc plate, blow gently, until it is quite dry and hard. requires great care, as it is liable to scorch; and, if the skin be partially dry, it will, although apparently finished, become indent depressed in those places where it is not thoroughly hardened. ascertain if the operation be complete, cease blowing, and draw in breath gently; when, if the larva is not dry, it will shrivel up, and be inflated again immediately; if, on the other hand, it is dry, it remain distended to its natural size and appearance. To prevent head from being extended too much, dry all the body except the and second segments, take the larva away from the spirit lamp, press the head into its natural position, afterwards drying it at distance from the flame, without blowing through the tube. If larva require colouring (as almost all green larvæ do) some very f powdered dry colour (rather darker than the original colour of larva) must be introduced into the skin after it is thoroughly dry. get the colour evenly on the inside of the skin, it must be rolled a in the hand. In order to direct the heat on to any particular pla small hole (about the size of the head of a pin) should be made in centre of the piece of zinc. This will be found to be particularly us when finishing the head of the larva, as above described. The objective having the glass tube bent is, that the head is then above the lev the flame; and the bulb is to prevent any moisture from the m running down the tube into the inside of the larva. I generally p piece of blotting paper in the mouth-piece of the tube.

The inflation while the larva is over the lamp must be kept without intermission. This is very easy after a little practice, and not cause any exertion, as the breathing is carried on through the real A larva should be kept without food for a day before being killed, is almost impossible to extract the food that it has just eaten; and, the larva is dried, this shows in an ugly black patch just behind the result of the larva will slip off tube; this can be prevented by tying a thin piece of cotton round end of the tube and the last pair of claspers. It is, however, as we possible, to dispense with tying the larva on the tube, as it very of distorts the shape of the last segments. The best larva for a first

t is one that has no bright colours and is not hairy; such as wanthographa, The reason for putting the larva in pyroligneous a solution of alum is to harden the skin, so that it may not be too much; and, if hairy, to prevent the hairs from falling out leing handled. When preserving a brightly-coloured and hairy ach as Bombya neustria, I generally starve it until it is nearly p, and then kill it and take the inside out. In conclusion, I remark that some amount of patience is requisite to ensure. Any further particulars or explanations that may be required be most happy, if possible, to afford.

Mark Lane, E.C.: November, 1869.

# NOTES ON THE BRITISH SPECIES OF CHILOSIA. BY G. H. VERRALL.

is my intention, in any notes on the Syrphidæ I may publish, to a single genus or group of genera and work through the spend I commence with Chilosia, as that is one of the largest and

becure genera. The most tangible characters for separating it from its allies, Syr-Melanostoma, &c., lie in the unicolorous brown, blackish, or colour and pitted front; superficially some species of Pipiza or orgaster resemble others in this genus, but the first is distinguished hairy perpendicular epistoma, without any knob or prominence, as second by its unequal sub-apical and discal cells, and by the tersely ribbed front of the female; also, the third joint of the anof Chilosia is always round or rounded-oval.

Ir. Walker has included in this genus *Leucozona lucorum*, L., now ated by its pale epistoma and markings about the base of the about, which is more arched.

in Schiner's catalogue of European Diptera, published in 1864, are 93 species enumerated, to which about a dozen have since added; these probably represent about 70 distinct species, as, in quence of the insufficient descriptions of many of the earlier are, the synonymy has always been in a most tangled state. The descriptions are those of Loew and Egger, in the "Verhandlungen ool. bot. Verein." for 1857 and 1860, and I have adopted the three ps proposed by Loew, the first of which is distinguished by the ence of distinct hairs on the disc of the epistoma, which must not confounded with the hairs on the eye-margins, nor with the often dant tomentum; these hairs are scarcely distinguishable to the

naked eye, but may be easily seen with a lens in a good light; the cies in this group always have hairy eyes: the second group h disc of the epistoma without any hairs, and the eyes (at least i male) distinctly hairy; the females in a few species (albitarsis, flav and mutabilis) have the eyes quite bare, but I think all the bare females have the legs black, with the middle joints of the front pale: the third group has the epistoma without any hairs on the and the eyes bare in both sexes.

Group I .- Epistoma with distinct hairs on the disc; eyes hairy

- 1. Estracea, L. This species may be at once known by its r shape and shaggy whitish pubescence, with a band of black across the thorax, and on the third segment of the abdomen apical segment is clothed with tawny hairs, thus giving the i the appearance of a Criorhino. I believe it is tolerably com though I have only met with it near Dorking, in June, 1868.
- 2. intonsa, Lw., may be distinguished from any other British speci this group by its soft brown pubescence, without the least in mixture of black hairs round the edge of the scutellum thorax; I expect it is rare, as I have only seen a pair in Mr. win's collection, probably caught in Sussex, and a male in Entomological Club collection. Our species may be griseiven Lw., as the belly is dull.
- 3. pigra, Lw. The characters of this species lie in the dark brown tennæ, with an only slightly pubescent arista, the brownish al of the male, and the peculiar whitish pubescence on the abdor of the female, forming slight fasciæ. In the Entomological C collection are one male and three females, and I possess one m captured by Mr. Smith in North Devon last year.
- 4. barbata, Lw., is distinguished by its distinctly pubescent arista a rather pale legs, the pubescence on the thorax is more redd than usual, and the hairs on the disc of the epistoma more about dant. I captured one female of this near Box Hill, in the sumn of 1867.
- 5. variabilis, Pz. This is the commonest of the genus, and may known by its entirely black legs, elongate abdomen, and bluis black colour. It is a large species, and occurs abundantly in woo and about hedges in June.

Group II. - Epistoma without any hairs on the disc; eyes (of the male) hair

6. impressa, Lw., is separated from the allied species by its entirel

ack legs and yellowish base of the wings. There is a female in e Entomological Club collection.

tarsis, Mg. This, and the following, are considered the same by ontinental authors, but I agree with Zetterstedt in thinking that bitarsis is well distinguished by its more bluish colour, more pelacid wings, smaller size, less pubescence, &c.; the species are rearkable for their black legs, with the middle joints of the front arisy yellow, and are distinguished by the almost bare arista from autabilis. There are about four pairs of albitarsis in the Entomological Club collection.

imana, Mg., is much commoner than the last, occurring in tolerale abundance about June, mostly in marshy places.

etabilis, Fln. There is one male in the Entomological Club colection; this I refer with considerable doubt to this species, which is distinguished by its black legs, with the middle joints of the front tarsi yellowish, and by its rather small size and pubescent wrista. The species should be common in England.

davicornis, F. This is the first of a group of large, thickly pubescent species, which have no strong black hairs round the edge of the scutellum; it is distinguished from the others by the entirely yellow legs of the female, and by the yellowish antennæ in both sexes; the male is smaller than grossa, with less pubescence, and entirely yellow tibiæ; there are two males and three females in the Entomological Club collection, and Mr. Smith has given me a female captured by him in North Devon.

chrysocoma, Mg., is known by its entirely yellowish pubescence, without the least intermixture of black hairs; the tibiæ have a dark ring round the middle. I possess a male, purchased at Mr. Stevens' rooms in 1868.

grossa, Fln., is distinguished by its large size, very thick pubescence, dark antennæ, and black pubescence about the tip of the abdomen; this black pubescence is very much less in the male than in the female. The species is not rare in woods in March.

chloris, Mg. This is the last of the thickly pubescent species, and generally has a few black hairs round the edge of the scutellum, it has much less pubescence than the others, and is distinguished by black hairs on the front, thorax, &c., and by the luteous antennæ, and a blackish spot about the middle of the tibiæ in the male. I believe it is not rare on Caltha palustris in April.

14. decidua, Egger, is distinguished from the rest of this group b broad, flat epistomal knob, yellowish antennæ, and whitish fa like pubescence on the abdomen in the female, like pigra, to w it is much allied; there is one female in the Entomological collection.

- 15. vernalis, Fln. I am not sure whether I am right in the determ tion of this species, and cannot at all make up my mind as the limits, as it varies exceedingly in the colour of its pubescence tibiæ, the shape of the abdomen, &c.; the species, or ground species, is distinguished from the others by its smaller size, as shining epistoma, dark antennæ with almost bare arista, black with the tibiæ ranging from almost black to broadly yellow at ends, and the thickened hind metatarsus. It is common in the dows and banks of rivers from May to July.
- 16. præcox, Ztt., is the smallest species I have seen, and may furthe known by its narrow abdomen, bare arista, and yellow legs, the femora at the base broadly, and the last joint of the blackish; there is a pair in Mr. Unwin's collection, and a fer in that of the Entomological Club.

Group III. - Epistoma without any hairs on the disc; eyes bare.

- 17. pulchripes, Lw. This is very much like the last species, but much larger, and has the eyes quite bare; it is readily known its pale legs, with the tarsi principally pale, the antennæ are dish-yellow, very large in the female, and the arista is almost but I believe it is not rare, as I have caught it near Lewes a Richmond.
- 18. scutellata, Fln., may be distinguished from any other species by very large swollen epistomal knob; its legs are principally pand its antennæ brown. It is the commonest species after van bilis, occurring on Umbelliferæ in June.
- 19. soror, Ztt., resembles the last, and, like it, has the tip of the stellum yellowish in the female; it differs in the bright orange-antennæ and smaller epistomal knob. There is one female in Entomological Club collection.
- 20. pubera, Ztt. This, and the following species, have the legs que black, and, all but the last, have the antennæ blackish; pubera distinguished by its bright reddish pubescence ("pube subaured Rond.), distinctly though shortly pubescent arista, and yellowish hyaline wings. I possess a female captured in the Plashett Woonear Lewes.

esa, Lw., is remarkable for its very slight punctuation; the puccence is nearly all black: there is a pair in the Entomological ab collection.

iqua, Mg., resembles the last, but is much more punctate, and a short pubescence of the thorax is generally pale; the wings of is and the last are of a blackish-hyaline hue; it should be comon in England, but I have only seen two males in Mr. Unwin's llection, and two females in that of the Entomological Club.

reculata, Fln., is remarkable for its bright orange antennæ and rge grey spots on the abdomen; the epistoma is also very much roduced like a snout: there is a pair in the Entomological Club of the collection.

n addition to these twenty-three species, I have seen (1) a male red in the New Forest rather like flavimana, but with the legs and the knees only brownish; (2) a female in Mr. Unwin's coln, probably allied to pictipennis, Egger, but smaller, and coming chloris, with no black hairs round the edge of the scutellum, and vings suffused with brown about the lower transverse veinlet near the tip; (3) a female in the Entomological Club collection to decidua, but rather smaller, with no pale fascia-like markings ne abdomen, darker tibiæ, shorter and barer arista, and yellower scence. There are upwards of a dozen species known on the conat very likely to occur in Britain; and I expect our lists to reach t forty species when Scotland has been more worked. that most of the species, so far as is yet known, are rare; and one d hardly expect to catch above six or eight in a year's collec-; but I believe that individuals will prove tolerably abundant near spot where any species is found to occur.

Mulberries, Denmark Hill, London, S.E. January 10th, 1870.

SCRIPTION OF A NEW SPECIES OF THE COLEOPTEROUS FAMILY  $DORCID \bar{E}$ .

BY CHAS. O. WATERHOUSE.

As the insect which I am about to describe belongs to the genus acrodorcas (Motschulsky), concerning which scarcely anything appears to be known, I may here note that I have determined (as it would spear, simultaneously with Major Parry) that Macrodorcas rectus (Motsch.) is identical with Eurytrachelus niponensis (Vollenh.). With

the other three species of *Macrodoreas* I am at present unacquain but in the British Museum collection there is a small varied *M. niponensis*, having simple mandibles, which so nearly agrees *M. rugipennis* (Mots.) as to make it probable that that species is ovariety of *M. rectus*, described immediately before it.

## MACRODORCAS OPACUS, sp. nov.

3, M. parallelus, depressus, opacus, nigro-fuscus; capite transi deplanato, supra subtilissimè granuloso, pone oculos punctis interspanticè ferè recto-truncato, angulis anticis obliquè truncatis, late parallelis; mandibulis tenuibus, sub-arcuatis, medio intus dente ol armatis; thorace capite latiore, transverso, supra subtilissime granu punctis parvis interspersis, suturá læviore parcè punctatá; seutello opaco, punctato; elytris elongatis, parallelis, apice rotundatis, opacis crebrè at leniter punctulatis, suturá sub elevatá, nitidá, parcè punctulatisis anticis 5-denticulatis, mediis uni-spinosis, posticis inarmatis; ta ciliatis; mesosterno parcè flavo-pubescenti, suturá nitidá, leniter carculatá, lateribus reticulato-punctatis; abdomine sat crebré punctul suturá læviore.

Long. corp. (mand. excl.) 9\frac{1}{2} lin. (20 mill.)

Long. mandib. 2 lin. (4 mill.). Habitat, N. Japan (Hakoda:
In Mus. Brit.

This species resembles a very small Macrodorcas niponensis; the head is not contracted behind, so that the sides are almost paral. The thorax is proportionately less broad. The elytra are almost of equal breadth, from the base to the posterior two-thirds, and are the evenly rounded; whilst in niponensis the elytra are slightly narrow at the base, broadest in the middle, and then gradually contracted the apex; the humeral angles are slightly produced; in niponensis telytra are thickly and finely rugulose-punctate, the interstices beishining; in opacus the elytra are dull, being somewhat thickly and elicately punctured. The abdomen is distinctly punctured, somewhat thickly so towards the margins, where it is dull; whilst in niponensis is sparingly punctured, the sutural portions of the second, third are fourth segments being scarcely punctured at all. The meso-sternum longitudinally concave. The metasternum in opacus is gently be distinctly canaliculate, especially posteriorly.

The female is at present unknown.

is on M. Pandellé's Monograph of the European Tachyporida.—M. Louis having recently (Ann. de la Soc. Ent. de Fr., 4<sup>me</sup> série, T. 9<sup>me</sup>, 1869, p. 261 published his "Étude monographique sur les Staphylins Européens de la Tachyporini, Erichson," I propose briefly to notice that work, and especially attention to such parts of it as are likely to interest British coleopterists. Pandellé, thinking Erichson incorrect in his chief character for this family insertion of the antenna at the base of the forehead, beneath a lateral we the mandibles and below the eyes), rejects from it Trichophya (for which ests, however, no other location) and (following Kraatz) Tanygnathus. He by omits reference to the parts of the mouth, relying upon more accessible modifications; prominent among which are the number and position of the runum (i.e., the space between the rims of the cavities of the intermediate terior coxe).

th regard to the Stephensian species, he remarks as follows-"Thanks to rotch, of Cambridge, who has generously communicated to me the extensive rches which he has made upon the species of Stephens, I have also been able e the synonymy of that author; but it is easy to perceive with certainty Stephens has described varieties rather than species; and, when even a species ognisable in his description, I cannot resolve to give his name priority over of Erichson and Kraatz, because I find it a great inconvenience to substitute name adopted by everybody, one that has been abandoned (délaissé) and of the legitimacy is nearly always open to contest." Without seeing the ty for troubling anew any British coleopterist for information which has been 1858 before the public in Mr. Waterhouse's catalogue, wherein are (with nany more) the few Stephensian synonyms given by M. Pandellé, I would remark, that, where Stephens' species are good, as it ish ere admitted some eir validity will not be affected by M. Pandelle's convenience or otherwise; hat, where good, they have not been abandoned by us; and that the other have not been adopted by "everybody,"—unless two generations of British dists are to be considered as not included in that comprehensive term.

bandoning, as above intimated, the Erichsonian characters, M. Pandellé ads to enumerate his own: these are very ingenious, but are too long for ription, and not very capable of condensation; the result of them being that mily, as restricted by him, may be distinguished from the Oxytelini, Omalini t from the absence of ocelli), Piestini, and Proteini by the head being smooth, less, and without impression or elevation at the base of the antennæ, and by horax being more extensively contracted in front than at the base; and from ther Staphylinidæ by the deflexed side-pieces of the elytra being wide and ed on their upper sides by a sharp and well marked ridge.

His genera are as follows:—Hypocyptus, Conurus (M. Pandellé finds no inenience in adopting this Stephensian genus in preference to the continentally-Conosoma of Kraatz, who proposed that modification of it on account of there g a prior genus Conurus in birds), Tachyporus (of which he makes two subra, Lamprinus and Tachyporus proper), Habrocerus, Cilea, Duv. (including the equent Leucoparyphus and Coprophorus of Kraatz), Tachinus and Boletobius prwards referred to as Bolitobius). The latter genus is made to include the

following sub-genera: Megacronus, Steph., Mycetoporus (these two absorb Bryon not even considered a sub-genus) and Bolitobius. Very long characters are ging these genera, in treating of which, as also of the species, the continental so of sub-division, reference, and tabulation is carried to a most perplexing extens the whole monograph being a table, and no one item complete in itself.

The species of the several genera are as follows.

Hypocyfus:—grandicornis, Fairm.; unicolor, Rosenh.; longicornis, Prujipes, Kraatz; rubripennis, n. s. (described from a single \( \varphi\), France); luvius Mann.; lancijer, n. s.; nigripes, Stephens; seminulum, Erichs.; apicalis, Bri Gren., Cat. et Mat., (attributed to England expressly); discoideus, Kr. H. tenuic Ktz., and pictus, Mots., are added as not having been seen by M. Pandellé; however, has had all the other types of Dr. Kraatz's described species of Tachyporida sent to him by that author.

Of these, H. rufipes, Ktz., is apparently possibly only a badly devel specimen of longicornis, to which insect it was attributed with a similar expreof doubt in Wat. Cat. M. Pandellé notes the prior H. rufipes of Stephens, b wrong in thinking that insect belongs apparently to another genus. It is si H. longicornis, and is even acknowledged by Stephens himself to be so, in "Manual," p. 376. H. pulicarius is suppressed as a species; the only mention it being that Dr. Kraatz has communicated a large example of seminulum u that name. Erichson's pulicarius is not referred to. The nigripes of Stephen identified from the description with the pygmæus of Kraatz: but Stephens' is is longicornis. In the "Manual," he refers his nigripes to læviusculus, Mann., states the hinder angles of the thorax to be "very straight,"-a definition w does not agree with the characters of pygmaus. The anisotomoides (Steph Wat. Cat. is not mentioned. In Wat. Cat. it is identified, with a query, læviusculus, Ktz. (these two names are inverted in Mr. Crotch's Cat.); it can however, from size and coloration be attributed to M. Pandelle's species of name; nor does Mr. Waterhouse's type agree with Stephens' description, w states the legs and antennæ to be red. It agrees however, specifically, Stephens' type, which is very immature, and appears to differ from the in known here as pygmæus, Ktz., solely in the more slender joints of its antenna

Conurus:—pedicularius, Grav.; Lethierryi, n. s.; lividus, Er.; littoreus, Lit pubescens, Er.; fusculus, Er.; binotatus, Gr.; Wankowiezi, n. s.; bipustulatus, J bipunctatus, Er. Of C. fusculus, M. Pandellé remarks that it seems well to be cognised in the immaculatus of Stephens' Illust., v, 1832. As Erichson's insect described in 1839, I suppose this must be considered as one of the "inconvenies species. Mr. Crotch, in his catalogue, gives precedence to the Stephensian name

Tachyporus:—(Sub-genus Lamprinus) erythropterus, Panz.; saginatus, (early spring, ant's-nests); hæmatopterus, Ktz.; pictus, Fairm; (Sub-ge Tachyporus) brunneus, Fab.; pusillus, Grav.; tersus, Er.; transversalis, Gra hypnorum, Fab.; scitulus, Er.; humerosus, Er.; quadriscopulatus, n. s.; rufico Gr.; Erichsonis, n. s.; ruficeps, Ktz.; chrysomelinus, Linn.; solutus, Er.; dist Reiche et Saulcy (solutus var?); obtusus, Linn.; and formosus, Matthews (à la m Française, "Mathews"). The unseen species are nigricornis, Gyll., nigriceps a crassicornis, Mann., flavipes, Mäkl., obscurellus, Zett., and caspius, Mots.

ese, brunneus is recognised as comprising several forms; the darkest e being T. elegantulus, Reiche et Saulcy. The dark form of pusillus is g equivalent to the Syrian T. Abner of Saulcy. Tersus is said often to be ed by small specimens of chrysomelinus (!). Scitulus is stated, on h's authority, to be the macropterus of Stephens. The two species are in Wat Cat. synonymy; and I have examined the Stephensian types, , as is the scitulus of Wat. Cat., a dark form of pusillus. T. abdominalis, s appeared in our later catalogues with and without a query, is disposed M. Pandellé suppresses nally, being represented by T. Erichsonis. er name, as there is no work or collection wherein it is not applied to species: e. g., abdominalis, Grav., =pale brunneus; of Kraatz, =pale ; of Erichson, = pale obtusus and Erichsonis, Pandellé; and of Mann., = isus. All so-called abdominalis in Britain that I have seen are pale solutus us. Erichsonis (l. c., 305) is described as rare, found at Berlin and in Nitidicollis (obtusus var.) does not occur in England, but in Ireland and , as far as my experience goes.

BROCERUS:—capillaricornis, Grav. A second species, from Chili (marginiblier) is noted, wherein the antennæ are not pilose.

numeralis, Grav.; ruspennis, Gyll.; marginatus, Gyll.; Fauveli, n. s.; atus, Fab.; pallipes, Grav. (frigidus, Ktz.); palliolatus, Ktz.; ruspes, De laticollis, Er.; slavo-limbatus, n. s.; marginellus, Fab.; collaris, Grav.;

EA:—colchica, Ktz.; silphoides, Linn. DHINUS:—nitidus, Fauvel; flavipes, Fab.; latiusculus, Kies.; proximus,

meus, Linn.; fimetarius, Grav,; Bonvouloiri, n. s.; discoideus, Er.; elongatus, Unseen species; nigerrimus, Solsky, and nivalis, Mots. e only remark in this genus calling for observation is that at p. 323, where dellé says that T. palliolatus seems to be the same as Stephens' scapularis; t the size given, which is that of his largest Tachini, leads to the belief that us (not described till 23 years later, and only just found on the Scotch ains) or an obscure variety of humeralis were in Stephens' view when oing it. M. Pandellé is, however, not accurate in his statement as to the size, ect in his inference. Stephens' largest Tachini are aterrimus and elongatus, he states to be respectively 4 and 41 lines long. He gives 3 lines for aris, and 3 to  $3\frac{1}{4}$  for cinctus, Marsham (humeralis). Kraatz gives 3 lines or his palliolatus, and 3 to  $3\frac{1}{3}$  for humeralis. If proximus had then been , Stephens' size would have been right, as Kraatz gives 3 lines for that species. he insects named scapularis in Stephens' collection are the same as palliolatus. olitobius:—(Sub-genus Megacronus) formosus, Grav.; Barnevillei, n. s.; Aubei, inclinans, Grav.; Cedronis, de Saulcy; cingulatus, Mann.; analis, Payk.; us, Grav. (Bryoporus, Ktz.); (Sub-genus, Mycetoporus) elegans, Mäkl.; splendidus, (non frequens!); nanus, Er., nec Grav.; tenuis, Muls.; debilis, Mäkl.; s, Er.; splendens, Marsh.; Reichei, n. s.; Chevrolati, n. s.; Reyi, Pandellé daris, Muls. et Rey, nec Payk., Steph., Sachse); Fairmairei, Pandellé (niger, n., nec Grav.); lucidus, Er.; Brucki, n. s.; Märkeli, Ktz.; marginatus, Ktz.; tus, Gyll.; longulus, Mann.; lepidus, Grav.; bimaculatus, Boisd. et Lac.;

ollis, n. s.; pachyraphis, n. s.; rufus, Er. (Bryoporus); rugipennis, n. s. (Bryop.);

FA

castaneus, Hardy and Bold (Bryop.); (Sub-genus Bolitobius) striatus, Ol.; b. Grav.; Kraatzii, n. s.; intrusus, Hampe; pygmæus, Fab.; trinotatus, Er.; exe Er.; lunulatus, Linn.; speciosus, Er.; atricapillus, Fab. Unseen species; punch and semirufus, Heer, crassicornis, ruficollis, and bicolor, Mäkl., humeralu prostratus, Mots., trimaculatus, Fab., laponicus, punctipennis and piceus, Thom

Mäklin's name is dropped as the founder of longicornis, his description of no points of separation from splendidus. Mr. Crotch (who in his catalogue the Stephensian name precedence) is quoted as identifying with pronus the clavicornis of Stephens, "dont la description lui convient en effet" (p. 343). Not theless, M. Pandellé calmly ignores the evidence which he himself publi Bimaculatus is the prior brunneus, Marsham and Stephens, = ruficornis, punctiventris, Thomson (persistently mis-printed "Thompson"). M. Pan whilst giving longulus, bimaculatus, and lepidus as species, states that he is believe there is only one specific type of them. Having examined very examples, I nave never had any difficulty in separating these insects satisfact

Rugipennis (p. 352) appears to be a new species, stated to be often confor with rufus, from which it differs solely in having its eyes convex, the large m front punctures of the thorax distant from the margin in the proportions of 16 instead of 9-10 (as in rufus), the outer punctures approaching the margin " instead of "evidenter," and the longitudinal striolæ of the elytra more defi To a dark variety of this species must be referred the insect brought forwar myself as most probably rufus, var., from Grayvel, Rannoch. Rugipennis is stated to occur in the Pyrenees and at St. Gothard. It will be noticed that Bryon cernuus is transferred to the Megacronus sub-genus, next to analis, and far rem from its quondam ally rufus, which will now, of course, have to be expunged Castaneus also occurs in the Pyrenees: M. Pandellé does not a Hardyi, Crotch, as Stephens' prior castaneus does not stand specifically. He rep Stephens' erroneous statement, that lunulatus occurs here, being more com than atricapillus. B. intrusus is like highly colored pygmæus, with the metaster tri-tuberculate, the tubercles being approximated, but separated by a com impression. - E. C. Rye, 10, Lower Park Fields, Putney, S.W., January, 1870.

Occurrence in Aberdeenshire of Amara Quenseli, Schön.; a species new to British list of Coleoptera.—In June last, I took a trip up the valley of the Dee Aberdeenshire, for the purpose of acquainting myself with the Coleoptera of district. Among other things less noteworthy, I captured two or three specim of an Amara which at the time I hoped would prove an addition to our list; as am now assured, through the kindness of Mr. Crotch, and on the authority M. Putzeys, who is working at the genus, that they are to be referred to A. Quen Schön., Syn. Ins., i, 190; Schaum, Ins. Deuts., i, 542.

This species belongs to the sub-genus Celia; and, compared with rufocis and bifrons, is broader, more ovate and depressed, with the elytral strike faint not deepened towards the apex. The colour above is brassy: but the elytra sometimes non-metallic and dull ferruginous, while the thorax is greenish. Len 34-4 lines. My specimens were found at a height of between 2000 and 3000 for the mountains of Braemar. The insect is said to be not uncommon in Lapla the Alps, and the range of the Caucasus.

n Deeside a single broken specimen of Magdalinus duplicatus occurred, under e circumstances as in Morayshire,—Robt. Hislor, Blair Bank, Falkirk, , 1870.

refuncte of Dyschirius angustatus, Ahr. (jejunus, Daws.), on the south coast.—
refunate enough, in October last, to take four specimens of this rare beetle
o resting in our lists on the authority of the two specimens taken by Mr.
Northumberland, and upon which Mr. Dawson's species was founded), by
g sand, along the border of a fresh-water ditch near the ferry, at Hayling
The insect can only be compared (of our British species) with a small
s, Putz. (elongatulus, Daws.): but is readily distinguishable, as has been
pointed out, by the evident wrinkling on the head (apart from the usual
of which are stout, and of equal length, the toothlets on the external
d, above the outer apical spine, being, moreover (and most especially the
off the two), very well marked. Mr. Rye has compared my specimens with
stamples above alluded to as belonging to Mr. Bold, who most kindly
ted them to the tender mercies of the post for that purpose.—H. Moncreaff,
th Street, Southsea, Hants, January, 1870.

ote on Bembidium anglicanum, Sharp.—This species is an old friend of mine, acquaintance I made many years ago on the sandy flats by the Irthing, near cost, Cumberland, where it was in great profusion, in company with B. atum, amongst the stones, and generally at some distance from the river. It s also on the "Devil's Water," and other of our upland streams. Noticing d legs and green colour, I sent specimens to Mons. Jacquelin Duval, when he preparing for publication his paper "De Bembidiis Europæis," and which he ned to me as varieties of femoratum, without expressing any doubt upon the . This led me to mention it in our catalogue of the insects of Northumnd and Durham, at page 237, as a "pretty variety" of femoratum, and as it has since stood in my collection. After a very careful examination of my s of anglicanum and its allies, I am of opinion that, although some of its s come very close to varieties of femoratum and Bruxellense (less so to small littorale), yet it is indeed a good and distinct species, and which I hope will ain a lasting proof of the acumen and unwearied perseverance of its talented sor.—Thos. Jno. Bold, Long Benton, Newcastle-on-Tyne, January 10th, 1870.

Blemus longicornis, Sturm, taken in Cumberland.—This beetle is so rare, that I induced to record that I have in my collection three specimens, taken by myself of rejectamenta, on the Irthing, near Burtholme, in June. This locality is a c lower down the river than Lanercost, and just where it makes a sharp turn tward.—ID.

Phyllotoma melitta, Newman,—Fenusa betulæ, Zaddach.—In the last number of "Entomologist," Mr. Newman describes a saw-fly as Phyll. melitta, and the tory of the larva, which mines birch leaves, is detailed by Mr. Healy. Through kindness of the last-named gentleman, I have received two examples of this lect, and find it identical with Fenusa betulæ of Zaddach (Besch. neuer oder wenig

bekannt. Blattw., 1859), who also gives a brief notice of the larva and its larthe words in the description of P. melitta "antennæ shorter than the the must result from a slip of the pen, as Mr. Healy's specimens have these of longer, if anything, than the head and thorax together, as they should be accost a Zaddach. The insect is a true Fenusa and not a Phyllotoma; the latter shas from 11 to 15 antennal joints, whereas in Fenusa there are only 9 (or except ally 10); moreover, the lanceolate cell ("lanzett-förmige Zelle," Hartig) in fore-wings is very differently shaped in the two genera—in Phyllotoma it expects to the base of the wing with a notch in its lower edge, and include oblique veinlet; in Fenusa it is of the form of a pointed oval or loop, a long ped connecting it with the base.—R. McLachlan, Lewisham, 18th January, 1870.

Note on the pairing of Odynerus spinipes, Linn.—Odynerus spinipes take specific name from the curious tridentate structure of the femora of the interme legs in the male. As I was unable to learn the use of this development, mobserved it for myself, my observation is possibly worth recording.

The structure above referred to is used by the male to imprison the win the female in pairing. By a very rapid movement he places himself on the of the female, and at the same instant secures her wings, the nervures of w near the base of the wing, fit into the spaces between the teeth of the femur are held there by the tibia being closed on them, and bent almost parallel the femur, the tarsi of the opposite sides, crossing close under the body of the net to be a superior of the femur, and the tibia. The "spines" of the femur, in fact, fit between the nervures of wing, and are, with merely the membrane of the wing between, in contact with tibia. The wings are thus held securely in a slightly elevated position, and a angle of about 90° with those of the opposite side. The anterior claws of the hold by the anterior angles of the thorax of the female, and his long antenna directed straight forwards, their curled extremities seizing the scapes of the anterior of the female.

The female, thus securely pinioned, still resists pairing; which I have n seen occur, although I have seen the female so held for several minutes. This in insects in confinement. I have only once made the observation on the was large, and on that occasion pairing failed to occur. Except in bright sunshine males are very sluggish.—T. Algernon Chapman, M.D., Abergavenny, January, 1

Morayshire Lepidoptera.—I spent six weeks (August 9th—September 2 with my friend, Mr. George Norman, at Forres, N. B., and had some very plear collecting. This locality, like many in Scotland, only needs well working to profun an abundance of good insects. The extensive sandhills (barren as the Author the "Lepidopterist's Guide" could possibly desire), moors, and woods of birch pine, afford a rich and unusually varied field for the entomologist. Except Noctue, but little is known of the Lepidoptera of the district, and I do not the even they are yet quite worked out.

The only butterflies of note which I saw were H. Semele, on the Culbin sa (I believe a scarce species in Scotland) and E. Blandina, common throughout district. I succeeded in obtaining a considerable number of eggs of this spec

and Hellins, and noticed that the butterflies while in confineank frequently from a wet sponge, besides feeding on treacle, and I think the species of the found advantageous with other species, when trying to s, to supply them with water.

rvæ of O. fascelina and antiqua, B. rubi and Saturnia carpini occurred on ths; and what I suppose to be D. coryli on birch.

the Geometra, I may mention Larentia olivata, common early in August; seia pulchellata, satyrata, nanata, and absynthiata, the larvæ of which fed glove, Erica cinerea, Calluna vulgaris, and rag-wort respectively; also Eup. ta by mothing on a heath. Though I several times examined the seeds and of Angelica sylvestris, I failed to discover any trace of albipunctata or aria.

the larvæ of T. juniperata were not scarce, but many were ichneumoned.

variata struck me by (contrary to the usual rule) being paler than in the

the imago and small and large larvæ occurred on the same day (August

Of the Noctuce, a good many To Drepanulæ or notable Pseudo-bombyces. es occurred; the following are the best-A. leporina, larvæ; A. myricæ? (if I breed the moth I will send a further notice); C. graminis, N. zanthoa, A. valligera (1), and M. fasciuncula (2), all on rag-wort flowers in full nine. M. literosa, sugar, August 15th—September 10th; A. cursoria (accomed by X. polyodon, T. pronuba, L. orbona, and S. anomala) burnt out of the bent- $_{3}$  (Psamma arenaria), August 11th and 21st; A. nigricans, at rest, August 22nd, greenhouse; A. præcox in the same, August 14th; also orbona, tritici, tragopos, &c. This formed an excellent trap: the moths getting in at night, and being ole to get out, were found at rest in the day time. The pracox was stowed y amongst the leaves of a small species of Trop xolum; the glaucous green of leaves being so like the colour of the moth that its discovery was quite an accit. A. tritici, common, mothing, especially after 11 p.m., one or two at sugar, gust; A. agathina, common, flying in the evening on a heath, August 20th to otember 8th (a friend took one at sugar); Triphæna orbona, marvellous red and ck varieties, quite unlike southern specimens; T. subsequa (1), worn, at sugar, ptember 15th (this may be distinguished from orbona by the narrowness of the e-wing); N. glareosa, August 17th—September 18th, on the wing, and at sugar; conflua, August beg.-mid., sugar; N. Dahlii, sugar and flying, August 10th to ptember 18th; N. neglecta sugar, in a pine wood, and at heath-bloom, August th-September 4th; N. canthographa, very dark varieties, and one with the igmata very large and almost confluent; Euperia fulvago (1), at sugar, September h, and one at "Cossus sap," September 16th. (I may here say that Mr. Norman pinted out to me that moths may not only be often found below the sugar, but a ot or two above, or on the other side of the tree, and, in the case of C. exoleta nd C. vaccinii, hanging on to the twigs nearest to the sugar. This is more frenently the case on some nights than others; sometimes more will be found a oot off the sugar than on it). Polia chi, common at rest on white walls, where it s difficult to see, and also on dark pine trunks, where it is very conspicuous, August 24th to September 11th (Mr. Norman took two at sugar); Epunda nigra, at sugar, at rest on pine trunks and on and among pebbles on a gravel walk, August 10th to September 20th; Aplecta occulta (2), at sugar, August 16th and Septer 16th (obtained a lot of eggs); H. pisi, larvæ, new to the district; C. exoleta vetusta, sugar, September; Stilbia anomala, 3 common on the wing, \$\Sigma\$ scaro

No Deltoides or Aventice.

Scopula lutealis; one moth layed its curious flat scale-like eggs upon its comrade! These eggs were laid upon the wings; but a specimen of Epunda nout-did lutealis, as it laid 50 or 60 eggs upon its own hind leg!

Scoparia muralis, on cottage walls, often close under the thatch; excessi abundant on one cottage, keeping out in good condition. (unlike most Scopar all the summer, till the middle of September. On this same cottage wall, after at night, A. tragogoponis, H. micacea and L. testacea were common, often in cop.

Scoparia truncicolella, not common, in a pine wood; and, with it, Phabietella, August 23rd.

The Micro-Lepidoptera of this place have been almost entirely neglected; following is a list of all that I took in nameable condition:—

Tortrix ribeana, xylosteana, and unifasciana, with a very distinct fascia; Pero favillaceana (Mr. N.); P. mixtana, hastiana and maccana, all bred from larvæ for on sallow, Myrica gale, &c.; ferrugana just coming out as I left. Teras caude (scarce) and contaminana; Penthina betuletana, Cnephasia subjectana, Grapho Paykulliana, var. costana commoner than the type; Penkleriana, common, as ust amongst alders; Pædisca corticana, small, distinctly marked varieties, communing all my stay; Solandriana, scarce; E. pinicolana, Mr. Norman took this a heath; Retinia resinana, the large lumps of resinous matter formed by last yea larvæ, and often containing the empty pupa cases, were common; D. Petiveran E. angustana, and A. pratana (scarce).

Plutella xylostella. Depressaria costosella, atomella, umbellella, arenella, assimilella (!) all occurred upon twigs of broom and furze at night. Some varieti of costosella had the veins and some lines on the thorax fuscous, and in oth respects different from the type; but, unfortunately, connecting forms occurre Of D. discipunctella (pastinacella), a specimen was brought to me. E. fewestrel and C. Hübnerella, among furze; G. humeralis (Lyellella), terrella, and mulinet were all beaten out out of furze; A. Gædartella was common, of course, amor birches, and C. radiatella (beautiful varieties) among oaks; C. costella, C. pseud spretella. A beautiful specimen of G. stramineella came out of an oak; the forwing is suffused with rich red-brown. Mr. Norman has since sent me a typic specimen from the same locality.—G. B. Longstaff, New College, Oxford, Octobrills, 1869.

Description of the larva of Hypenodes costastrigalis.—For eggs of this specie I am indebted to Mr. T. J. Carrington, who sent me some on July 8th, 1868 Unfortunately, I have mislaid the notes I took of their appearance, but I know was the more struck with it, because it did not correspond with my recollection of the eggs sent me by Dr. Knaggs, in 1865.

However, I know that these sent by Mr. Carrington were deposited singly and were of the usual Noctua-shape, and dark-red in colour.

The larvæ were hatched on July 12th and 13th, and, after a little hesitation seemed to take kindly enough to the flowers of Thymus serpyllum; I cannot help

that they also took kindly to one another-in the style of Hamlet's little more than kin, and less than kind;"-for, although I never caught act of cannibalism, somehow they became fewer and fewer in number, August 12th, there remained but one full-grown larva to be described. newly-hatched larva is quite translucent and glossy, in colour rose-pink, er towards the tail; the head blackish; the skin furnished with some At the end of a week it had lost much of its translucent look, the d become more of a claret, the bristles had disappeared. At the end of reek or ten days, much of the purplish-red had vanished, and the colour me a dark brown. On August 12th, the full-grown larva was thus des-Length, when stretched out in walking, about 12-inch; but its general s to "hunch up" its middle segments into a close loop, keeping the front segments close to the surface on which it is resting; and for this position e seems specially adapted, the head and three following segments being aller than the 5th, 6th, 7th, and 8th, all four of which are tumid, and the gments being also somewhat smaller; there are but two pairs of ventral 2 legs in all. The colour of the back is dark purplish or crimson-brown, ssy, making it hard to distinguish the obscure markings on it; through

gy, dark, chocolate colour.

gust 15th, my larva became a pupa, naked, because I had unfortunately dit whilst setting about a slight cocoon: its length was about \(\frac{1}{4}\)-inch, its lunt at the head, tapering gradually towards the tail, which was rounded, the cylindrical, with polished surface; in colour it was all over alike, of a cen, faintly tinged with brown.—J. Hellins, Exeter, December 2nd, 1869.

runs a slightly paler central stripe; the sub-dorsal line is faintly seen as prown line, edged with blackish below; the sides and belly are paler, and threous in tint; taken altogether, the larva has a general appearance

rly breeding of Aplecta occulta.—Last autumn I had eggs of this moth given my friend Mr. G. B. Longstaff, from a ? taken at Forres. These hatched time, and fed up on Plantayo lanceolata, growing, however, very irregularly. 12th December, some four had gone under the moss to change.

the 11th January, I was surprised to find a fine 3 specimen of the perfect n my breeding cage. The larvæ and pupæ had been kept during the whole a room, which had a fire during the day-time.

any pupæ of Noctuæ, such as piniperda, &c., which usually produce the perfect much earlier than occulta, were in the same box, and are yet unchanged. arly breeding of occulta seems to be worth recording.—Geo. NORMAN, Bening, 12th January, 1870.

ore abnormal appearances of Lepidoptera.—A male Selenia illustraria emerged w Year's day. Like the one recorded in last month's Magagine (p. 190) it he spring—not the sammer—form. On this day (January 14th) a fine 2 lecit helveticata has made its appearance. Am I a privileged individual, as is these abnormal appearances which I have recorded, or have others experithe same? I would repeat that, in all the cases, the pupe have been kept cold room, at the top of the house, facing the north.—J. GREENE, Apsley Redland, Bristol, 14th January, 1870.

Note on Hydrilla palustris.—The specimen of Hydrilla palustris tal Cambridgeshire, and referred to by Dr. Knaggs at p. 124 of this year's "An was exhibited at the Entom. Soc. on May 2nd, 1864 (vide Ent. Mon. Mag. p. 23), and was, as there stated, taken in Quy Fen on May 29th, 1862, b Scholfield. The insect was disturbed from among some half dried grass which been cut a day or two, and flew pretty quickly.

I was present and saw the capture made.—H. Jenner-Fust, Jun., Hill (Berkeley, January 2nd, 1870.

Lepidoptera captured at Guestling in 1869.—Notwithstanding the unfavor season, I have met with about 20 species of "Macros," which I had not previously found here. Some are generally reputed common,—as Anticlea badiata, Emmensuraria, and Agrotis suffusa,—which I had often wondered I had not before; while a few have the reputation of being somewhat scarce,—as strigula and Ephyra orbicularia.

In the following notes, the date given is the first day on which each sawas observed.

The season began early, for, on January 28th, Eupithecia pumilata was I dead in a breeding cage in the open air; another specimen appeared on February April 2nd, Taniocampa miniosa, three, at sallows; May 5th, Anticlea derivate specimen in the Rectory garden; 27th, Lithosia aureola, one specimen; June Diphthera Orion, one found at rest on an oak trunk, another bred a few days from a pupa, found, I believe, under moss; July 9th, Halias quercana, on mothing, one by beating; 10th, Calligenia miniata, this was in abundance, flying dusk; 12th, Limacodes testudo, two specimens, one utterly spoiled in securing Nola strigula, by mothing; 14th, Dicranura furcula, Erastria fuscula, Perio syringaria, and Tephrosia crepuscularia, one of each, by mothing (the speci recorded last year as T. biundularia, should have been T. crepuscularia); 1 Phycis roborella, Rhodophæa consociella, and Rhodophæa advenella, several of each mothing, and at light; 21st, Odontia dentalis, one bred this day from larvæ colle on the beach, at Pett (misprinted last year, "beech at Pelt"), no more appear for more than a fortnight; August 5th, Eupithecia subfulvata, one, at light; Liparis chrysorrhea, a nice series, bred from larvæ taken at Pett; 9th, Cuci asteris, one, at light; 10th, Clostera reclusa; 13th, Platypteryx hamula, two evening, at light; 16th, Agrotis puta, one, at light; 17th, Ephyra orbicularia, tl specimens; E. porata and E. punctaria have been abundant this year; 2 Camptogramma fluviata, &, by mothing; September 3rd, Acherontia Atropo specimen of the brown variety of the larva was brought to me, which I sent Mr. Buckler to be figured; 9th, Sphinx convolvuli, a few days after this, two w seen in my garden, and continued to appear until October 8th, and one was seen late as the 15th of that month; 22nd, Agrotis saucia, took five at different times sugar, and saw others: 24th, Noctua glareosa, by mothing. Several species wh have been common in other years, were either not seen at all, or were represen by one or two specimens. - E. N. BLOOMFIELD, Guestling Rectory, Hasting November 18th, 1869.

# Obituary.

Mr. Benjamin D. Walsh.—With sincere regret we have to announce the death of this well-known American entomologist. Rumours of such an even having taken place had been current in England for some weeks, but it was not appeared to the contract of the contr

ently that their un-hoped-for confirmation arrived. In Mr. Walsh our ntic brethren have lost one of their most energetic workers, a man who did more than any other entomologist, either in Europe or America, to ate the necessity for scientific advisers, when absurd prejudices and ions regarding the causes, effects, and treatment of the depredations y insect-pests, surmount all other considerations in the minds of the . Though his bent evidently tended towards utilitarian entomology, Mr. tood prominently forward as a man of science, and his discovery of the Cynips will not soon be forgotten. A devoted adherent to the theory of he at all times rendered to his scientific mentor the homage of a pupil, we mistake not, the forthcoming works of our renowned philosopher will w much he assisted him. Respecting Mr. Walsh's history, we cannot do han extract the following from an American paper, dated the 26th Decem-39, believing it gives a true portraiture of the man-"The unexpected of our State Entomologist, Benjamin D. Walsh, of Rock Island, from es resulting from his being run over by a railway train at that place, excites rsal regret. He was a man of strong likes and dislikes—as good a hater . Johnson could have desired—and doubtless had his enemies among those opinions he had freely scouted, and whose wrong-doings he had unsparingly mned; but his heartiness, his earnestness in the pursuit and dissemination ientific truth, his efforts in popularizing and making his favourite study of nology of immediate and practical value to our farmers and fruit-growers, nake him regretted and remembered by all.

Born in England in 1808, and a graduate of Trinity College, he attained honours of a fellowship which he resigned, and coming to Illinois, was end first in farming, afterwards dealing in lumber, and finally, as he attained a grate competence, in pursuing his favourite study of entomology. As editor he 'Practical Entomologist' in 1865-7, and afterwards associated with Riley, the State entomologist of Missouri, in the 'American Entomologist,' as earned a national fame."

INTOMOLOGICAL SOCIETY OF LONDON, 3rd January, 1870.—H. W. Bates, Esq.,

fr. Hewitson sent for exhibition a magnificent collection of butterflies collected r. Buckley, in Ecuador. Although in the locality for only a few months, he had it time collected about 5,000 butterflies, including 135 species new to science. Buckley, who was present, gave some interesting details respecting the distring, &c., of these insects; remarking that very few species occurred on both of the Andes, and that in Heliconia there seemed to be a species peculiar to valley.

Professor Westwood exhibited drawings of a peculiar example of Anthocaris amines in the collection of Dr. Boisdaval. This appeared to be a male in the the orange-tip of the fore-wings was variegated by patches of the white the coloration.

Mr. Bond exhibited two examples of Acrydium peregrinum from Cornwall; about xamples had been captured in that county, and in Devon, last autumn.

220 [February

Professor Westwood, on behalf of the Rev. L. Jenyns, exhibited a spectaphodius said to be frequently vomited by the Hottentots.

Mr. Müller exhibited photographs of Abax parallelus and Clerus formicathe former being remarkable for its zig-zag striation; the latter for its plands.

Mr. Quaritch (present as a visitor) made some enquiries respecting a addressed to him from a lady in Ireland whose library had been much damag the "book-worm." A specimen exhibited as one of the culprits was Lessaccharina, which had evidently been mistaken for the Anobium to which damage was really attributable. Professor Westwood said he had found the of benzine the most efficacious agent for destroying those pests.

The Rev. A. E. Eaton communicated a paper "on some new British sp of Ephemeridae."

Mr. Butler read "descriptions of six new species of Callidryas."

Mr. Pascoe read "A revision of the genus Catasarcus," and exhibited num species in illustration thereof.

Mr. Crotch communicated a paper entitled "The genera of Coleoptera stehronologically (1735—1801)."

HAGGERSTON ENTOMOLOGICAL SOCIETY, December 3rd, 1869.--Mr. E. Ba President, in the Chair.

The half-yearly meeting of this Society took place on the above date.

After the usual business was concluded the President called upon the retary to read his half-yearly report, he accordingly did so, observing during course of his address that he was happy to inform the Members that the So was in a flourishing condition, having a balance in its favour; that during past six months 14 fresh Members had been elected; and that the cabinet had enriched by kind donations from following gentlemen, namely, Messieurs New Cooper, W. Harper, Jonas, King, Gainsbury, and Lorimer. Some beautiful vari of A. caja, A. cardamines, V. Atalanta, L. Alexis, H. leucophaaria, B. pilos A. betularia, C. ferrugata, and S. tiliæ had been exhibited at the weekly meet As regarded the Society's Library, that had not been forgotten, several addi having been made thereto, and a brother member, Mr. E. Newman, had presented Society with a copy of his British Moths, and had given each member a copy of Insect Hunters' Year Book for 1868. Amongst the many rare specimen British Lepidoptera exhibited by the various members during the past halfthe following deserve special mention: Colias Hyale, Erebia Cassiope, Lyc Artaxerxes, Acherontia Atropos, Sphinx convolvuli, Sesia chrysidiformis and ich moniformis, Lithosia aureola and helvola, Chelonia plantaginis, Bombyx castre Selenia illustraria, Psodos trepidaria, Fidonia carbonaria, Eupithecia pusill Lobophora polycommata, Cidaria picata, Platypteryx hamula, Stauropus j Ptilophora plumigera, Notodonta dictæoides, and dodonæa, Cymatophora rid Acronycta leporina, Cirrædia xerampelina, Dianthæcia Barrettii, Dasypolia Tem Cucullia chamomilla, Heliothis dipsacea, Anarta melanopa and cordigera, Ph interrogationis, Scoparia paralis (alpina), and Hypercallia Christiernana. conclusion, he congratulated the Members on the great success of the Socie "Exhibition" which took place on the evenings of the 18th and 19th of Novem last, several leading Entomologists having honored the Society by their attendar and the Society's Meeting Room being crowded each evening with Entomologi friends and visitors, many of the latter expressing the great pleasure they l derived from an inspection of the many beautiful objects that had been submit to their notice.

#### BY THE REV. J. HELLINS, M.A.

.1

ce the publication of my note on the hybernating ovum at f this vol., I have collected some information which may be of

chaps I ought to say, that the question I put in my former note in previously started in the course of a correspondence between Wallace and Dr. T. A. Chapman. The former had satisfactorily hed the fact that the larva of Bombyx Yama-Mai is perfected the egg shell a month after deposition, and therein hybernates, briging till spring; and he was anxious to know if this were the inerally with those species which pass the winter in the egg. thought of this question some years ago, I might have made use of opportunities, which have presented themselves from time and then I could have given dates for a great many species; ar, my deficiences have been made up by friends, and so, from my books reaching back to 1857, and by the kind help of Dr. T. A. an, Revs. Bernard Smith and H. Harpur Crewe, and Messrs. Barrett, W. Buckler, T. J. Carrington, A. H. Jones, W. Machin, Traill, I have got together what follows.

uring this winter, eggs of Bombyx mori, Trichiura cratægi, nos tiliaria and angularia, Cheimatobia brumata and boreata, ia vetulata, Ptilophora plumigera, Xanthia aurago and Polia chi een examined from time to time up to the middle of January; far-with one exception only-nothing but the faintest traces future larvæ have been detected by microscopic examination of still fluid contents. At the last examination-about January 14th larva of X. aurago was found partially developed, but not to such ree that it could be extracted from the shell in the larval form. r, therefore, the guess formed by Dr. Chapman and myself, that, general rule, the larva is not developed till after hybernation, has confirmed. Still there are many more species to be examined, far indeed than I imagined till I set myself to make the list of , which I now give in two divisions; the first containing those es, the dates for the deposition of the egg and the hatching of the of which can be vouched for either by myself, or by one or more of bove-mentioned correspondents; and the second giving the species, t which we have no positive information, but which we believe to the same habit. I think it probable that the names of some rs ought to be added.

1					
NAME OF SPECIES.		LARVA HATCHED.	NAME OF SPECIES.	EGG LAID	. LAR
Lycæna Ægon		March	Chesias spartiata	0-4-2-	-
Hesperia comma	. August			. October	
Liparis dispar	. Do,				
monacha				. November.	
Orgyia antiqua	July, Sept	. Do			
Trichiura cratægi	Aug., Sept., Oct.			September.	
Pœcilocampa populi	Nov., Dec				Mar
Clisiocampa neustria.	July, Aug.		Luperina cæspitis	- "	
castrensis				July, Aug.,	
Epione apiciaria	August		lota		
vespertaria	July, August		macilenta		
Crocallis elinguaria	August		Anchocelis rufina		. Mar
Ennomos alniaria		February	pistacina		. Mar
tiliaria	September	May, June	litura		. Man
fuscantaria.	August		Xanthia citrago		Mar
erosaria			cerago		. Do.
angularia			silago	Sept., Oct	Do.
Himera pennaria	July, August		aurago	September.	Mare
Fidonia pinetaria	October		gilvago	Do	Mar
Hybernia auranti aria	July	March	ferruginea	Sept., Oct	Do.
defoliaria	November		Cirrhædia xerampelina	August	Apri
Cheimatobia boreata.	Oct., Nov		Tethea subtusa	July, Aug	Do.
brumata	Nov. Dec	March, April	Cosmia trapezina	Do. Do	Do.
Oporabia dilutata	Do. Do	Do. Do.	diffinis	Do. Do	April
fligrammaria	Oct., Nov		affinis	Do. Do	Do.
Melanthia rubiginata	September		Polia chi	Aug., Sept.,	Mare
Scotosia vetulata	July	April	flavocineta	September	April
Cidaria immanata	Do	March (?)	Epunda viminalis	July	Marc
	August	March, April	Miselia oxyacanthæ	October	Do.
prunata		April	Agriopis aprilina	Do	Do.
testata	Do	Do	Amphipyra pyramidea!	Do	Marc
populata	Do	Do		September.	Do.
dotata	Do	Do		August	April
Eubolia cervinaria	November	April, May		guo	rhin
<u> </u>				1	

#### II.

Halia wavaria?
Eupithecia tenuiata,
rectangulata,
debiliata,

Scotosia rhamnata, Gortyna flavago? Tethea retusa, Euperia fulvago,

Dieyela oo, Cosmia pyralin Catocala nupta promis

Into the question of the gradual formation of the larva within tegs shell, I do not pretend to enter; my note must be regarded simple as a contribution towards clearing up those points in the econom of our *Macro-lepidoptera*, on which the numerous books, which a published to tell us all about them, fail to throw any light.

Exeter: January 25th, 1870.

P. S.—On communicating the above notes to my friend M McLachlan, he very kindly looked up some papers, which he remet bered to have read in Continental publications, namely, two continuous by Von Prittwitz to the Stettin. Zeitung, 1861, p. 191—22

62, p. 481-509, entitled, "Die Generationen und die Wintern der in Schleischen beobachteten Falter;" and also Rössler's zeichniss der Schmetterlinge des Herzogthums Nassau," 1866; om them has extracted a list of the British species mentioned by writers, amongst those which they speak of as hybernating in the Von Prittwitz gives seven of the species mentioned in my list, and the following eight in addition:—

nnis Paphia, obius Pamphilus, na Agestis? Thecla quercûs, w-album, pruni,

Thecla betulæ, Liparis salicis.

Rössler gives 47 species mentioned in my first list, and 31 others come of which, however, I had put in my second list), viz.:—

a betulæ,
w-album,
pruni,
quercûs,
cucullatella,
strigula,
ris salicis,
a wavaria,
ithecia tenuiata,
sobrinata,

Eupithecia debiliata,
Thera juniperata,
firmata,
Cidaria fulvata,
pyraliata,
Diloba cæruleocephala,
Cymatophora diluta,
Nonagria geminipuncta,
typhæ,
Orthosia upsilon,

Tethea retusa,
Euperia fulvago,
Dieyela oo,
Cosmia pyralina,
Polia nigrocineta,
Hadena protea,
Toxocampa cracea,
Catocala fraxini,
nupta,
promissa.

rectangulata,

A few of the species, however, given in these lists, seem to have the in by some mistake; for instance, Mr. Buckler found when he ed A. Paphia from the egg, that the larva hatched in August, hyberted, and fed up in spring; also in the case of C. Pamphilus, eggs laid May became perfect insects by the following August; perhaps, ever, Von Prittwitz may refer to the eggs laid by these August terflies. As to Lycana Medon—Agestis (indicated with great doubt Von Prittwitz), Professor Zeller has elaborated its history with at care (v. E. M. M., vol. iv, p. 74), and he there states that the larvae ch before August 31st, and hybernate in the same stage.

Orthosia upsilon I know nothing about myself, but several of my ends tell me it hatches in September, and hybernates as a larva; lia nigrocincta has been the subject of notes by Messrs. H. Doubleday I C. S. Gregson, at p. 90 and 116 of the current vol. of E. M. M., d it appears that, whilst the latter gentleman gives it as a species bernating in the larva stage, Freyer and Millière, as well as Rössler, as it with those of which the eggs do not hatch till spring.

I ought to have been able personally to vouch for Cidaria pyraliata d fulvata, but they had escaped my recollection.—J. H.

# DESCRIPTIONS OF NEW SPECIES OF DIURNAL LEPIDOPTERS FROM MADAGASCAR.

#### BY CHRISTOPHER WARD.

The four new species here described have been recently receiby me from Mr. Alfred Crossley, my collector in Madagascar. Amore other good species, he sent a series of the rare *Papilio Lalandei*, incling the female, which had not been hitherto taken; it differs from male only in the marking that crosses the discoidal cell of the up wing being narrower, and light yellow instead of lavender.

# PIERIS MANANHARI, n. s.

- ¿. Upper-side: Anterior wing yellow; the apical angle bla containing four yellow markings mingled with black; a small bit spot at the extremity of the discoidal cell. Posterior wing entiry yellow, lighter towards the base and inner margin. Under-side Anterior wing light yellow, darker at the base and apex; a small bit spot at the extremity of the discoidal cell; a second black spot between the second and third nervures. Posterior wing yellow, deeper than the anterior; with an indistinct narrow marking commencing near to centre of the anterior margin, continued downward, and crossis midway to the inner margin.
- ♀. Upper-side: Anterior wing white, with a broad black margi which is widest at the apex; a black spot at the end of the discoid cell. Posterior wing yellowish-white, the broad black margin continuround to, and narrowing at, the anal angle. Under-side: Anteri wing white, with black margin, excepting at the apex which is orang a black spot at the extremity of the discoidal cell. Posterior wi orange, with a narrow, irregular, black band, commencing near the centre of the anterior margin, and continued downward, crossing midway nearly to the inner margin. This band is much more disting in the ♂ than in the ♀. Expanse, ♂♀, 2½ inches.

A remarkable species, which almost appears to connect Anthocar Ione with Pieris.

### ERONIA VOHEMARA, n. s.

- 3. Upper-side: Anterior wing pointed at the apex, white the space from the middle of the anterior margin, across the cell, and down to the middle of the hind margin is bright yellow; apical margin black. Posterior wing entirely yellowish-white.
  - 9. Under-side: Anterior wing orange, shading to white at the

margin; a black spot at the extremity of the discoidal cell. for wing entirely orange. Expanse 27 inches.

well marked species.

r. Watson, who has examined the plumules, finds them quite t from those of any other.

#### DANAIS NOSSIMA, n. s.

7. 2. Upper-side: Anterior wing white with a black margin ued entirely round; apical angle black, containing two white ; a triangular black marking immediately above, and partly runinto, the extremity of the discoidal cell, containing two small oval spots near the upper margin; a similar marking at the hind n, with small white spots near its edge (in some examples these triangular black markings are confluent). Posterior wing white, a black band continued round the outer margin, changing to n at the anal angle, and containing a number of small white spots.

3. ♀. Under-side: as in the upper-side, except that the white in the black band are much more numerous. Base of wings, and ares, black. Expanse,  $\circ$ , 3 inches;  $\circ$ ,  $\circ$ ,  $\circ$ , inches.

Allied to Danais Ochlea.

"Frequents only the tops of the highest-trees" (Crossley).

#### JUNONIA ANTEVA, n. s.

- 3. Upper-side: Anterior wing strongly falcate; bright rufousvn, shading to dark brown at the outer margin; apical angle brownk, containing a transverse light blue band, faintly interrupted by e nervures running through it. Posterior wing curved inwards at anal angle; rich deep brown, paler at the base; two narrow, waved s, of a darker brown, following the margin, and meeting at the anal le. Both wings with a beautiful purple bloom.
- 2. Under-side: Anterior wing brown with two indistinct waved rkings near the base. Posterior wing brown, with a narrow band ssing from the anal angle to the upper margin; six small white ots on the inner-side of this band; two short grey waved bands at e anal angle. Body brown. Expanse, &. 2 in inches.

This species will be best placed between Junonia Augustina and n. Cacta, but is quite distinct from either.

"A rapid flyer and very wary" (Crossley).

Halifax: February, 1870.

DESCRIPTIONS OF NEW SPECIES OF ERYCINIDÆ, FROM CHONTAL NICARAGUA.

BY W. C. HEWITSON, F.L.S.

#### EURYGONA LABIENA, n. s.

Upper-side (male): orange. Anterior wing with the costal a outer margins and apex broadly dark brown. Posterior wing with costal margin, which is broad, and the outer margin, which is narr dark brown; the inner margin paler brown.

Under-side: orange-yellow. Posterior wing with a sub-margi series of minute black spots.

Exp.  $1\frac{1}{20}$  inch.

Form of E. Mys, but larger.

#### EURYGONA ELMIRA, n. s.

Upper-side (male): orange. Anterior wing with the costal m gin from the middle, the apex (which is acute) and the outer marg dark brown, with its inner border sinuated at the middle. Poster wing long, the apex dark brown; the outer margin darker than t rest of the wing.

Under-side: white. Both wings crossed beyond the middle by rufous band, with the outer margin broadly pale grey-brown, mark by a series of minute black spots bordered with white.

Exp.  $1\frac{9}{20}$  inch.

Size and form nearly of E. Dorina.

#### SYMMACHIA LEENA, n. s.

Upper-side: rufous-brown. Anterior wing with many indisting red spots below the median nervure; a minute spot on the middle the costal margin, a second spot a little beyond this, and a third neethe outer margin, before the middle. Posterior wing brick-red, with the base, the costal and inner margins, which are broad, the outer margin, which is narrow, and five or six spots between the median nervure all dark brown; some red spots near the base.

Under-side: dark brown. Anterior wing as above. Posterior wing with some grey spots between the median nervules and near thinner margin.

Exp. 19 inch.

I have, I hope, described the spots on both sides correctly; s many of the scales have been removed by mites that it is not easy t determine the original spots.

#### SYMMACHIA THREISSA, n. 8.

per-side (male): black. Anterior wing marked at the middle ostal margin by a triangular transparent white spot. Posterior th a broad unequal band of scarlet parallel and near to the argin.

der-side: dark brown. Anterior wing with the inner margin

grey.

p. 1 to inch.

e largest known species.

a small collection just received from Mr. Belt there are six of this rare and beautiful genus-S. accusatrix of Westwood, peter of Cramer, S. tricolor and S. rubina of Bates, and the two now added to the list.

#### MESENE XYPETE, n. s.

pper-side (male): rufous-orange. Both wings with the outer , the fringe, and a sub-marginal band (broken into spots) dark . Anterior wing with the base, four triangular short bands (the ear the apex longer than the rest) from the costal margin, two e black spots, and one or two near the outer margin, all dark . Posterior wing with seven or eight brown spots below the e, the two largest of which are placed thus, one near the apex, the near the anal angle. Underside: as above; except that it is near the outer margins, and that both wings are marked by many

black spots.

Exp. 18 inch. Size and form of M. Phareus.

# LIMNAS (?) BRYAXIS, n. s.

Upper-side (male): dark brown. The palpi, forehead, thorax, and of the abdomen, yellow. The centre of both wings, from the to the middle of the outer margin, bright yellow; angular on the rior wing and widest in the middle (in some specimens not touching outer margin).

Under-side: as above; except that the base of the costal margin he posterior wing is yellow, and that the abdominal margin has a d fringe of pale yellow.

Exp. 130 inch.

This species is so singular in its appearance that it does not seem ed to take its place in any described genus. It is too slender for Limnas, but agrees very well generically with L. Inaria, which see to me rather out of place where it is.

I am indebted to Mr. Belt for the six species now described,

Oatlands, Weybridge: 18th January, 1870.

DESCRIPTION OF A NEW SPECIES OF BRACONIDÆ BELONGING TO GENUS NEW TO BRITAIN.

BY THE REV. T. A. MARSHALL, M.A.

Among some parasitic Hymenoptera forwarded to me for inspect by Mr. Champion, are two females of the genus Pambolus, Hal, I Mag., iv, 49,  $\delta = Dimeris$ , Ruthe, Stett. Ent. Zeit., xvi, 329,  $\delta \circlearrowleft$ ; ibid. xv, 344,  $\circlearrowleft$  only. This genus, hitherto known only on the Conent, is an interesting addition to our Braconidæ. The description are two, P. biglumis, Hal. ( $\delta$  only), from Belgium,—and mirus, Ruthe ( $\delta \circlearrowleft$ ), found under moss at the roots of an oak in Berlin. Both are described as blackish, and may well be suspected being identical, in which case the name mirus, Ruthe, must be drop. The very different coloration of the present individuals leading to conclusion that they are new, they are here described as

#### P. MELANOCEPHALUS, n. sp.

Sub-apterus, rufus, capite nigro; antennis apicem versus, abdom segmento secundo, cum tarsorum apicibus, fuscis. Terebra abdominis midia parte paulo brevior.  $\varphi$ .

Long.  $1-1\frac{1}{2}$  lin

Very finely punctulate, with pale, scattered, adpressed hairs. A tennæ 15-jointed, pubescent, joints 7—15 fuscous. Wings halterifor Metathorax bispinose. Segment 1 longitudinally striolated, conv semicircular, divided from the 2nd by a deep incision. All the rest the segments are concealed by the 2nd, so that the large, ovate, sess and depressed abdomen appears bi-articulate, a character at once desive of the genus.

Mr. Champion informs me that he found "one specimen on t downs near Box Hill in moss, and the other in dead leaves at Daren Wood." Both were taken last October. wrence in Britain of Calodera rubens, Er.—Among some insects sent to me is by Mr. G. C. Champion, I find a single specimen of a Calodera which I rubens, Er. (Gen. et spec. Staph., 67; Ktz., Ins. Deutschl., ii, 142). Not my type of that species, I sent Mr. Champion's insect to Dr. Sharp, who also happening not to possess an authentic type) also refers it to C. rubens. appearance and even and somewhat parallel form prevent its being I with any of the recorded British Calodera; in fact, it can only be likened to specimen of Homalota languida (but with, of course, much more transverse to the antennæ). It is pitchy-black, with reddish-brown antennæ and legs, exceedingly finely and closely punctured all over.

ro specimens have subsequently been taken in a marshy place, near am, by Mr. Champion.—E. C. Ryε, 10, Lower Park Fields, Putney, S.W., ry, 1870.

oservations on Ceuthorhynchus distinctus, Bris.-M. Ch. Brisout de Barneville t described (in L'Abeille, vol. vii, p. 42, February, 1870) a Ceuthorhynchus this name, which he refers to the Pyrenees and England, as rare. From his it, it appears to differ from C. marginatus solely in having six joints to the lus, instead of seven. I entertain no doubt whatever that this is an insect I sent to M. Brisout last year, and to the structural peculiarities of which I rew his attention. I took one specimen of it on 12th July, 1863, at Dover; t the same sweep of the net secured two or three undoubted C. marginatus. specimen is recorded by me in the "Entomologist's Annual" for 1866, p. 105; he result of that record was the discovery by Dr. Sharp and Mr. F. Smith of ar insects amongst their series of marginatus. Since that time, in June, 1869, at Folkestone, where marginatus was tolerably common, I mounted and ined very many specimens of it, with the express object of finding more ples with six-jointed funiculus. In this I so far succeeded, as to find four such mens, which I recorded at p. 58 of the present vol., as aberrant in structure. e I have now very carefully examined under the compound microscope, with result that my former conviction of their specific identity with marginatus is oborated; my chief reasons being that in one of these four specimens the culus of one antenna is six-jointed (the third joint of the funiculus being unduly gated and having apparently absorbed what should have been the fourth joint, igh with no apparent suture), and that in the other the funiculus is appaly seven-jointed, the third and fourth joints being anchylosed, but with a very lent indication of the usual articulation. If, in so limited a number as four mples, one so aberrant in structure be found, I see no difficulty in considering other three as equally aberrant from (but still conspecific with) the numerous ical marginatus in company with which they were taken. These four specimens y much in size (as does marginatus), two being as large as ordinary marginatus, the other two rather smaller than my smallest example of that species. After most careful and minute scrutiny, I fail to detect the slightest difference in ncture, scaling or facies, between the specimens in which the funiculus is sevennted, and those in which it has only six joints.—ID.

upon an exhaustive monograph of the European Cryptocephalides, makes a remarks (Ann. de la Soc. Ent. de France, 1869, ix, p. 7) of which I add a traction, as being likely to interest British Coleopterists:—"My own observation of the corresponding of the Rouget, Godart, Varin and Peragallo, lead me to regard Cryptocephalus bipustule" (Fab.) as a species perfectly distinct from C. bipunctatus" (of which the Brice C. Lineola is unquestionably a simple variety, although the type-form has not yet discovered here.—E. C. R.). "The habitat of the two insects is not the same, "the ridges formed by the strize of the elytra are very much more evident," form a sort of rugosity not found in C. bipunctatus. It seems to me impossible "maintain the mistakes of the past upon this point."—ID.

Note on the identity of Spanish and English species of Homalota.—Mr. Croduring his visit to the Asturias last summer, collected some specimens of the ge Homalota; and, with his usual kindness, has allowed me to make an inspection them. I find that they agree in most cases exactly with our British examples; a except in one or two instances, could not be distinguished from my Scotch specime The following is a list of the species.—H. labilis, Er, elongatula, Gr., decipie Sharp, fungicola, Kr., merdaria, Th., boletobia, Th., cadaverina, Bris., fungi, corbata, Er., picipes, Th., analis, Gr. (the var. major of my Revision), fusca, Sa inquinula, Er., sordidula, Er., clientula, Er., nigra, Kr., volans, Scriba, boletoph Th. (not yet a British species, but I think sure to be found here), pygmæa, Gr. (tdark var. found in Scotland), macrocera, Th., parva, Sahl., analis, var.? This lies the only one that presents a chance of being considered a new species.

I have little doubt that the species of *Homalota* are very widely distributed Europe, and that their number will be found to be much smaller than would supposed from the large number of British species. Indeed, I have evidence the two or three of Mr. Wollaston's species from Madeira are identical with our Britiones, though still known by different names. I will mention here that *H. obliqu punctata*, Woll.—*H. pavens*, Er., and *H. montivagans*, Woll.—*H. pulchra*, Kr. this latter case Mr. Wollaston's name stands.—D. Sharp, Eccles, Thornhill, Dumfrit February, 8th, 1870.

Further note on the parasitism of Aphodius porcus.—It appears that Aphodius porcus is rather a scarce species; and, several of my correspondents having aske me for specimens, I made an attempt to find them at the beginning of August las With a view, at the same time, of further confirming the natural history of the species, I determined to search for them before they had left the 'sausage rolls' of Geotrupes stercorarius in which they had been reared. I had, however, greed difficulty in finding the site of deposits of the previous autumn; but, after som failures, I discovered the remains of a burrow of stercorarius, the contents of which were in a semi-pulverulent condition, and contained six specimens of A. porcus (on of which I destroyed in my search) quite recently emerged from the pupal state, and one or two of which I clearly found to be contained in a cavity or cocoon partially framed of earth. I afterwards secured one more specimen, in another burrow and in several other burrows I found a few larvæ, which, from size, &c., I suppose to be those of porcus. These, however, I failed to rear. I have also found some

larvæ and pupæ of G. stercorarius. The pupa lies in a firm cocoon, artly of earth and partly of the remains of the pabulum, usually at the the tunnel where the egg was originally placed, the larva having traversed l backwards and forwards at least once (I suspect, oftener).—T. Algernon Abergavenny, January, 1870.

of this recently introduced rare species, and which was taken by myself of this recently introduced rare species, and which was taken by myself of this recently introduced rare species, and which was taken by myself origination of the control of

have taken the following species, amongst others:—Polistichus vittatus, have taken the following species, amongst others:—Polistichus vittatus, luridipennis and littoralis, Bembidium scutellare and ephippium, Pterostichus is, Dichirotichus obsoletus, Anisodactylus pœciloides, Bryaxis simplex, Trogostenellus, Corticaria curta, Coccinella labilis, Heterothops binotatus, Philonthus, Staphylinus stercorarius, Ochthebius marinus, margipellens, bicolor, œratus Igmæus, Berosus œriceps, Agabus conspersus (common), Hydrobius oblongus olor, Donacia menyanthidis and nigra, Erirhinus festucæ, Bagous tempestivus

pha opica.

the neighbourhood of Croydon:—Acidota cruentata (in a sand pit at Shirley),
this cordatus and punctatulus, Amara rufocincta, Panagœus 4-pustulatus,
fus cordatus and Byrrhus Dennii; and on the chalk-downs near Henley,
is depressus and Byrrhus Dennii; and on the chalk-downs near Henley,
sus castaneus, Cryphalus abietis, Tomicus micrographus, Ilyobates forticornis,
primitus, Scaphidema metallica, Balaninus rubidus, Miarus campanulae,
mis atriceps, Agathidium convexum, Catiodes ruber and rubicundus, Smicronya
Homalota mortuorum, atomaria, testaceipes and pagana, and Clerus formi-

in the neighbourhood of Dartford, Greenhithe, and Darenth Wood:—Lamous clematidis, Hypulus quercinus, Trachys minutus, Xylophilus populneus, es roboris and Scymnus minimus.

At Mickleham, Box Hill, and Buckland:—Colon Zebei (one specimen, \$\delta\$) and neum, Thalycra sericea, Trichonyx Markelli, Hydnobius strigosus and punctatus, sophila inquilina, Eros minutus, Cryptocephalus nitidulus, Hyperaspis reppensis, sophlæus ferrugineus, Gonioctena pallida (beaten off hazel), Malthodes fibulatus, ar and atomus, Crepidodera atropæ, Ceuthorhynchideus quercicola (Wat. Cat.) ar and atomus, Crepidodera atropæ, Ceuthorhynchideus quercicola (Wat. Antheropunctiger, Scydmænus angulatus, denticornis, pumilio and elongatulus, Antheropus silaceus, Mordellistena lateralis, Psylliodes dulcamaræ, Xyloterus domesticus Aspidophorus orbiculatus.

In July, I spent three days in the New Forest, and, though too late to get by desiderata, took the following species, amongst others:—Microrhagus pygmæus

(2, swept off fern), Strangalia aurulenta (dug out of rotten tree stumps),  $\ell$  viennense  $(1, \mathcal{G})$ , Tomoxia biguttata, Tychius 5-punctatus, Cryptarcha imperialis strigata, Bagous frit, Cryphalus fagi, Orchesia undulata, Epuvæa 10-guttata, Anth mus Chevrolatii, Haploglossa pulla, Tiresias serra, Homalota autumnalis (at sHaliplus variegatus, Hydrana testacea (common) and Ischnoglossa corticina.

I have also taken Stenus major at Morden, and a single specimen of Lept testaceus in a nest of Formica fuliginosa at Tilgate Forest.—G. C. Champion, Walworth Road, London, S.

Captures of Hemiptera-Heteroptera during 1869.— Near Whitstable, K Henestaris laticeps and Agramma lata; near Croydon, Schirus dubius and Zia cærulea (abundant); and at the New Forest, Orthostira concinna, Lopus goth and Eysarcoris æneus.—ID.

Note on the young larva of Colias Hyale.—On August 13th, 1868, Mr. A Jones most kindly sent me more than 20 eggs, which he had obtained from a tured female; and although I failed with the larvæ, yet I think my experience be of benefit to anyone who may have the same luck another time.

The larvæ were hatched August 17th to 20th, first ate their egg-shells, then settled on Medicago lupulina, in preference to Lotus corniculatus, Trifol repens and pratense, with all of which I supplied them; they grew slowly, do off one by one, till the three or four survivors were about \(\frac{1}{3}\) inch long, at whiste they hybernated, but never began to feed again in spring, and so perishe February and March, 1869. Perhaps the right way would have been to have a them in a greenhouse, and fed them up rapidly without hybernation.

The egg is of a long fusiform shape, one end conical, the other knobbed like a bag tied round the neck; the shell delicate and glistening, ribbed longit nally, and with very slight transverse reticulations: the colour at first a pale strength changing to rich apricot or salmon colour, and lastly blackish. The newly-hate larva is of a very pale olive, freckled with brownish; head as wide as the beand blackish; on each segment a transverse row of clubbed pellucid brist After a moult it becomes pale yellowish-green; and after another, a full great And from this time to their early and lamented death, my larvæ remained follows:—Length about \( \frac{1}{2} \) inch, stout, cylindrical, uniform in bulk: head narrow than second segment. Colour a dull full green, head slightly tinged with brown whitish spiracular line; the whole skin covered closely with short black spines bristles.—J. Hellins, Exeter, December 14th, 1869.

Description of the larva of Hydrelia unca. -I am indebted to Mr. Carrington eggs of this species. They were laid on June 23rd and 24th, 1868, and receive by me June 28th. The egg is soft-looking, rather irregularly shaped, but sof the usual echinus-like outline, with nearly 40 very shallow and irregularists, connected by irregular transverse reticulations, and in colour a full yellow; fact, it looks like a little speck of butter.

On June 29th, the eggs became dark grey, and on 30th the larvæ came fort by July 17th, they were about \(\frac{1}{2}\)-inch in length, by the 28th, \(\frac{3}{2}\)-inch, and by t first week of August, full-grown. ey fed well on Carex sylvatica; when at rest, stretched out flat along the of their food; looping in walking, and jumping about angrily when touched. It is newly-hatched larva is a little greenish looper, with the usual dots showers, and emitting bristles. As it grows, it becomes more and more of a sen after every moult. When it is full-grown, the length is quite an inch, are slender, cylindrical, uniform throughout in bulk, save that the 3rd segmens a trifle swollen, and the last three segments taper slightly to the anal hich is bluntly rounded off, or almost squared off; the head is hard and ar, about as wide as the second segment; there are two pairs of ventral ally developed and useable, and the rudiments of another pair, useless.

the colour is a full velvety-green, with a pulsating dorsal vessel of a darker there is a fine whitish-green sub-dorsal line, and a rather broader spiracular very pale yellow; the spiracles are indistinctly brownish, and the hinder into paler than the rest of the back; the belly is also paler, but still of a ch green; the head somewhat yellowish-green.

The larva retired under ground for pupation. -ID.

Description of the larva of Thanaos Tages.—On the 28th of May, 1868, I end to meet with this species on the wing in a thicket, and brought home me three specimens alive; and luckily having a plant of Lotus corniculatus d, I covered it with a glass cylinder and placed them therein.

After a few days, I saw that two of the butterflies were dead, whilst the third looked lively, and fortunately proving to be an impregnated female, she sited on the leaflets of the plant a few pale greenish pellucid eggs, of a some-collintical feature standing on end.

selliptical figure standing on end.

About the middle of June I noticed the egg shells were empty, but I could see the young larvæ either then, or for some time subsequently, until June, when at last I detected them, three in number; they had been all the while ing in little caves, formed by drawing together three leaflets with silken ads, and it was the glistening of these threads in the sun that first caught my

Each cave was formed by the two outer leaflets being drawn almost close ther (leaving space enough for the ejection of frass), and the middle one being tover them like a curved roof; all this was managed quite naturally, so that cave passed easily for a leaf not quite expanded.

Some of these caves had already served their turn and been abandoned for ver ones, and it appeared that the larvæ had been feeding on the inner surface the leaflets; in others I was able with the help of a lens to detect through the erstices somewhat of the fat form of their tenants.

On the 30th of June I turned one out for figuring; it was then nearly threethths of an inch long, with a prominent dark purplish-brown head covered with
nute pale greenish points; the body rounded above, a little flattened underneath,
ump, and tapering a little at each end; the second segment much smaller than
e third, especially in the part just behind the head; the colour of the body a
le rather bluish-green, somewhat paler still on the sides and belly; a distinct
usal line of darker green, a sub-dorsal line faintly paler than the ground colour;
whole surface of back and sides irrorated or shagreened with exceedingly
inute greenish-white points.

These most interesting little fellows continued to feed and grow, and as began now to eat away the whole thickness of the leaflets forming their of their ravages exposed their bodies to the light, and as soon as this happened moved off to new habitations; this change of residence always took plan night, though from the slow and deliberate pace at which they moved, it chardly be called a "flitting."

Throughout July these larvæ consumed a great quantity of food, so that I frequently to renew my plant of *Lotus*, but still they hid themselves, and quiet so persistently, that I no longer wondered how it was that no one had found this common species for me, even though its food-plant was known.

After various moultings, I secured three more figures of them at inter and by July 31st, they had attained their full growth. At this time the larv nearly three-quarters of an inch in length, with the back a little arched and belly rather flattened, being just of the same form as when younger; the very plump, and thickest in the middle segments, the segmental folds disti each segment also sub-divided into five portions, the broadest one in front; head is somewhat heart-shaped, and flattened on the face: the colour of the b is rather more of a yellowish-green than before, the minute raised points black the dorsal line a darker green, and the sub-dorsal paler stripe delicately ed above and below with a fine faintly darker line; the anterior pair of tuberor dots just perceptible on each segment, but only with a strong lens; the spirace region forming a slight ridge of paler whitish-green, the spiracles very small red in colour: the head is purplish-brown as before, but with the addition of ochreous streak from the crown down the front of each lobe, united below another broad transverse streak at some distance above the mouth, and also spot of the same colour on each cheek.

Having sent one to Mr. Hellins, I found my two remaining larvæ had, early August, fairly left their hiding places, and were ascending the sides of the cylind first one and afterwards the other; presently, having gained a footing on the greleno cover at the top, they began to spin threads of silk and to pucker up the leinto a fusiform shape; the foundation threads were very strong and thick, sparallel to each other, in a little transverse series at each end of the retreat: larva that was on the leno first contrived to complete its hybernaculum; but to other, after spinning the two bundles of parallel threads to form the two ends its intended winter quarters, was unable to find the leno slack enough for pucker into the required shape, and began again the next day at another part, but we again defeated, and finally relinquished its attempt on the leno, and went bek amongst the plants; and some weeks afterwards I found it on the earth killed mildew; the same fate befel the one which I sent to Mr. Hellins.

The other slumbered safely through the winter, until early in April, 1869, ray of sunshine reached it, and I saw the larva coming out as though in distret to escape either the warmth or the strong light; whereupon I shifted the glass a pot containing a violet plant, and the larva crawled down the sides till it four the violet leaves, and then selecting two near the bottom in a shady position, in a hour it had spun a retreat between them as they lay horizontally one below the other; but I suppose this operation exhausted its strength, for when, after waitin in vain for the butterfly to appear at the proper time, I pulled the leaves asunde I found it had died without having become a pupa.—WM. BUCKLER, Emsworth January, 1870.

Description of the larva of Epunda lutulenta.—On the 8th October, 1868, Mr. y Terry, of St. Marychurch, captured a  $\circ$  of this species, and having induced o deposit her eggs in captivity, he kindly sent me a portion of them, retaining for himself, and sending others to the Rev. E. Horton.

The egg of lutulenta is circular, a little depressed at top, and flattened beneath, d and beaded; when first laid it is of a canary yellow, and changes in a few to a pale pinkish grey-brown, having the top and a broad zone round the le of the sides of a much darker tint of the same: in about a month it ges to a purplish grey tint, and just before hatching assumes the bloom-like arance of a purple grape.

The last change was simultaneously assumed by all the eggs in my possession ovember the 22nd, that is about six weeks after they had been laid, but from preason or other unknown to me, no more than two larvæ were hatched out; riends, as will be seen below, were more fortunate.

The young larvæ at first has a very dark purplish-brown head, the body pale 7 greenish and translucent, the internal organs showing through the skin give appearance of a broad dark grey stripe down the back; there is a dark brown e on the second and on the anal segments; the tubercular dots distinct, and kish, each having a rather long dark brown hair.

My young larvæ fed freely on Poa annua, but, the grass becoming infected with lew, they both suddenly died on the 14th January, 1869. I am, however, able to be young their history, Mr. Terry having kindly forwarded me some of his batch on the present of the second second present the second segment, and the head both paler.

These individuals fed tolerably well for some days on mixed grasses sown in a t, and they varied their food a little by feeding on some of a miscellaneous election of plants that had sprung up with the grass, especially on Potentilla graviustrum, leaving chickweed and trefoil almost untouched; however, they d never seemed healthy since their arrival, and they soon began to die off, the agest-lived going about the middle of March.

Soon after this, I became aware that the Rev. E. Horton had been more excessful, and though his stock of young larvæ kept out of doors during the inter had been a temptation to robins as choice morsels of food not to be resisted, at there remained one solitary individual uneaten, which he most kindly entrusted my care, and on May 8th, I had the satisfaction of figuring it.

This larva was then one inch one-eighth in length, and moderately stout, of ne usual Noctua form, its colour a bright yellowish-green, finely freckled with aler green, the segmental folds showing yellow; the dorsal stripe of darker green, he sub-dorsal stripe of very pale rather dull yellowish-green; the spiracles whitish laced on a thin dingy red line, and close beneath them a rather broad stripe appering at each end of greenish ochreous, edged above and below with whitish

(the whitish edgings of this stripe appear to me to be the most distinctive mate the species); the ventral surface and legs of the same colour as the back.

On the 19th of May, Mr. H. Terry succeeded in finding a nearly full-grown larva on grass in its native haunts, and subsequently two or three others on flower of wild mint, and the leaves of Scabiosa arvensis, these he also forwarded to me they were then an inch and a-half in length, rather darker and less brilliant in colour than the one reared by Mr. Horton, but otherwise similar, even in the details, with the exception that the spiracles were pinkish flesh colour, delicately edged with black, and each situated in a purplish-red crescentic blotch; the plan on the second segment slightly tinged with the same colour, and in the middle of the sub-spiracular stripe there was a streak of dull pink beneath each spiracle.

On June 19th, I received another larva from Dr. F. Buchanan White, who had found it feeding on heather in Inverness-shire; this would not touch grass, but fed up on heather within a few days after I had it.

This larva was of the same form and character as the foregoing, though the ground colour was a rather bright olive-green, and the dorsal stripe becoming suddenly blackish on the fifth segment continues so to the twelfth, being intensely black just at the beginning of each of these segments; on each of the same segments there was a black streak anteriorly on the upper edge of the sub-dorsal stripe, there was also a fine black spiracular line interrupted only by the spiracks themselves, and at the segmental divisions.

Although, as I said, this last-named Scottish larva refused grass, yet from what I could see of the others, I am of opinion that this species is a veritable grass feeder, probably eating grass all through any mild weather that may occur in winter, and in spring probably attacking any low plants that may suit its taste. It seems also that the larvæ invariably both feed and rest on the blades of grass with their heads downwards.—ID.

Notes on Lepidoptera observed at light at Norwich.—After living for years in a country place out of the reach of gas, I looked forward with sanguine anticipations to the opportunity of collecting afforded by the lamps round the outskirts of this city. But it must be confessed that, thanks to the very unfavourable season for insects, hard and constant work has given but meagre results; of the few good species, most having occurred only singly.

Last October and November (being the end of a good season), I found Nonagris lutosa and a few Petasia cassinea, while Diloba caruleocephala, Cidaria miata, and a few other species swarmed. This season I have found Porthesia chrysorrham (singly!) Cerura bifida, Ennomos erosaria and fuscantaria, Acidalia promutata (in plenty), Eupithecia subfulvata, assimilata, and frazinata, Scotosia certata, Phibalapteryx lignata, Pelurga comitata, Luperina cespitis, and a singularly pale form of Dianthacia carpophaga: a most scanty list for the amount of time and labour bestowed.

Among the smaller insects, the Crambites were well represented as to species, though individuals were scarce. Among them were Schenobius forficellus, Homassoma nimbella and nebulella, Phycis abietella, Rhodophæa formosella, udvenella, marmorea, and suavella. Of Tortrices and Tinsina, I observed an unusual number

es, and even a few plumes; the common ones, Pterophorus pterodactylus, etylus, ochrodactylus, and Alucita polydactyla, occurring occasionally, and vorn specimen which agrees with nothing so well as Lienigianus.

conota roborana, Orthotenia striana, and Eupecilia atricapitana were actually at the lamps, and specimens occurred of Catoptria expallicana, Sciaphila a, Sericoris decrepitana, Halonota fæncana, Peronea aspersona, Retinea a, and at least a dozen more Tortrices, mostly common; while of Tineina, Tinea semifulvella, Enicostoma lobella, Depressoria charophylli and subproa, Gelechia rufescens, leucatella and domestica, Ecophora lanaris and ora lineolea; and, seeing that many of these were found repeatedly, and in, not to say excited, state, it seems reasonable to credit them with a amount of activity at night, than we have usually been in the habit of CHAS. G. BARRETT, Norwich, 16th November, 1869.

some Lepidoptera found on the chalk near Norwich.—The chalk formation underlies this city and neighbourhood, at no great depth, finds its way to face in a valley about two miles away; and it is curious to observe the of species of Lepidoptera to be found on this spot, but almost or quite from the surrounding country.

e of the most interesting of these is Homeosoma nebulella, which is rather among the rough herbage, and may be found at dusk on the blossoms of and musk-thistle. It may also be trodden up from patches of Anthemis though what attractions there may be in this plant does not appear.

the chalk-pits, Argyrolepia subbaumanniana is common, and so different, live, from Baumanniana, that it seems impossible to doubt its distinctness coies; indeed, when at liberty, it looks as much like Chrosis tesserana, and ilar habits.

the same old pits, Cochylis stramineana is plentiful, and Pterophorus plugios, Elachista triatomeu, Opostega salaciella, and Bucculatrix cristatella occur, ry rarely, Nemotois scabiosellus.

ong the neighbouring hedges and banks may be found Catoptric amulana, Phtheochroa rugosana, Endopisa Germarana, Dicrocampha simpliciana, a janthinana, and Stephensia Brunnichella; and, on the trunks of some ash trees, in a lane, Eudorea lineolea, Depressaria granulosella, and Gelechia crella.

me few of these species are to be found in hedges for a considerable disbut the majority appear confined to the chalk.

the other hand, many chalk insects, such as Euboliu bipunctariu, Melanippe and procellata, and Gracilaria semifascia, seem altogether absent.—ID.

why appearance of Eupithecia albipunctata.—A very fine specimen of this made its appearance in my breeding cage on New Year's Day. The room in I had the pupa is very cold, and much exposed.—C. Campbell, 14, Blackburn Hulme, Manchester, February 12th, 1870.

238 [Mare

Lythria purpuraria, near York.—I have two old specimens of this rare insetaken in Stockton Forest, four miles from here, by Henry Baines. These are with short household pins; were taken at the same place, and by the same cap as my old Acidalia rubricata, which species has since been taken in the same locality.—T. H. Allis, Osbaldwick, near York, February, 1870.

Note on Cidaria reticulata.—I wish to call attention to a distinct character the male, I allude to the large round yellow spot on the under wings, which sho both above and below. I have not seen any notice of this in English works.—I

Depraved appetite in Lepidopterous larvæ.—I have made a note of two cases depraved appetite in Lepidopterous larvæ during the past season.

The first is that of a larva of Agrotis saucia, which, though furnished w green food, ate a portion of the dead and dried body of a larva of Agrotis rip and the other is that of a larva of Eupithecia expullidata, which I watched devour one of those claret—or mulberry—coloured aphides, that infest the Solida virgaurea.—J. Hellins, Exeter, 12th January, 1870.

The sexes of Coniopteryx psociformis.—With reference to the supposition of C. psociformis and C. aleyrodiformis may be only the sexes of one species, as not in my Monograph of British Planipennia (Tr. Ent. Soc. 1868, p. 193), I may rem that Mr. B. Cooke recently submitted to me two examples of psociformis whappeared to be decidedly  $\beta$  and  $\hat{\gamma}$ . They were quite similar in general form, b with small hind-wings; but that which I consider the  $\hat{\gamma}$  was smaller than other, and with the abdomen swollen and elongated, apparently full of eggs ROBERT MCLACHLAN, Lewisham, February, 1870.

British Lepidopterists as viewed by a German.—Some years since, when I was London, I called on a dealer in High Holborn, and, looking through his stores, s among others, a Castnia that suited me. It was the, as yet, rare papiliona Walker. He demanded sixpence for the specimen, which was somewhat worn, quite fit for the Cabinet. I could not do better than buy it at so cheap a pr When I had looked over the exotics and picked out something more, he she some European species. There I found a very beautiful Luperina Haworthii. M from curiosity than from a desire to buy, I asked the price. "One pound" was answer. I replied that, considering the low price of the exotics, he perhaps me "one penny." "Oh! no, no, Sir. One pound: that's a British insect." Hel scarcely spoken, when in came a British Collector who admired this "fine species and without more to do, because this was a British-born specimen, bought it one pound. As a German insect, this Noctua would only have cost a few per but as a pure-blooded Briton it was worth one pound. "O sancta simplicitas murmured I, and went my way .- PETER MAASSEN, of Elberfeld [in the "Stetti Entomologische Zeitung," 1870, p. 58, note].

[The insect noticed is Calena Haworthii of our lists. We would not for moment accuse Herr Maassen of having invented a ridiculous statement for purpose of throwing up in stronger relief the self-isolating tendencies of many dopterists, but conclude that he made some great mistake as to the species. ish entomologist, in his right senses, would give "one pound" for this f which a specimen, British or otherwise, is not worth more, at the highest, theen-pence. The moral to be drawn from the anecdote is evident.—EDS.]

#### Nebiew.

'AUNE GALLO RHENANE," Coléopterès, Tome 1er, 2me Livraison; by Albert Caen, 1869.

e prefatial chapters of this work, completing the 1st vol., and extending to ges, accompanied by 4 exceedingly well executed plates, are now published; themselves form a satisfactory introduction to the study of European era. The present livraison treats of metamorphoses, external anatomy and (with an elaborate terminological list); and also enters at some length upon es" and "varieties," sexual and other differences in structure, &c., the laws penclature, and the different schemes of classification. To these is added a mentary list of contemporary coleopterists of the district to which the work viz., France, Belgium, Holland, Luxemburgh, Rhenish Prussia, Nassau, he district of the Valais. This introductory portion (though, of course, ing no idea of the way in which the body of the work is to be treated) can be with interest by the general student, and can hardly fail to be instructive to oung British Coleopterist, abounding as it does both in original observations n well-known facts put in an agreeable way. The remarks upon the foundation, of species (in the usual entomological sense) are particularly commendable. ngst them is the suggestion that there should be an annual or biennial come of well known Coleopterists (to be held at Paris), to whom all unique, new, rkable or doubtful species should be submitted, with a view to the furtherance of ledge and consequent reduction of synonymy. A typographical error makes auvel term this committee an "aeropage" (instead of "areopage"): it is to be I that this is not an augury that the proposed assembly is likely to remain nubibus."

M. Fauvel notes that only three species of our Brachelytra (which he rerates at 700), viz., Stenus exiguus, Er., and Oxypoda rupicola and Homalium lipenne, Rye, are peculiar to Britain; but this does not, of course, include in of Dr. Sharp's new species of Homalota. He also remarks that Stephens' syporus var. nitidicollis of obtusus is the only really indigenous race we possess at group. His general observations lead to the impression that many changes menclature will be made by him, and that he intends to collocate allied insects the have hitherto chiefly relied for specific distinction on the character of having anting wings, added to the usual modifications of structure attending those litions.

ENTOMOLOGICAL SOCIETY OF LONDON, January 24th, 1870 (Anniversary Meeting). . SMITH, Esq., Vice-President, in the Chair.

The Ballot for the Council and Officers for the present year took place, when srs. H. W. Bates, Dallas, Dunning, Fry, Grut, McLachlan, Parry, Pascoe,

Salvin, E. Saunders, A. R. Wallace, and Wormald, were elected Members of Council; and Mr. A. R. Wallace (President), Mr. S. Stevens (Treasurer), Mess J. W. Dunning and R. McLachlan (Secretaries), and Mr. E. W. Janson (Librarian as Officers. Mr. Dunning read the report of the Council and (in the absence of Mr. Bates) the President's Address. The proceedings terminated with the use vote of thanks to the outgoing Council and Officers.

February 7th, 1870.—A. R. WALLACE, Esq., F.Z.S., President, in the Chair.

It was announced that the Council offered two Prizes of the value of Figure 3 Guineas each to authors (whether members of the Society or not) of Essays Memoirs, of sufficient merit, and drawn up from personal observation, on the anatomy or economy of any insect, or group of insects—the Essays to be sent in before the end of November, 1870.

Mr. Bond exhibited four examples of Satyrus Semele in which the colompeculiar to each sex were combined, although the individuals were essential either male or female.

Professor Westwood exhibited drawings of Anthocaris cardamines, Lyon Adonis, &c., presenting parallel peculiarities to those exhibited by Mr. Bond.

Mr. Bond also exhibited various cocoons of Bombya Yama-Mai and B. Pem from various countries (on behalf of Dr. Wallace).

Mr. Stainton exhibited a box of Continental Micro-Lepidoptera, of which ear example was carefully labelled with respect to locality, date, food-plant (if bred), at this being the plan he adopted throughout his collection; and he suggested it we the only perfect plan, inasmuch as numbers referring to a register, though of equivalue while a collection was intact, were comparatively useless if it were disperse

Mr. Bond exhibited more examples of Acridium peregrinum from Plymont (not Falmouth as recorded in our last).

Mr. Smith exhibited specimens of L. migratoria from Scotland, and remarks on the differences between them and L. Christii.

Mr. Janson exhibited (for Mr. Crotch) Philonthus cicatricosus of Erichson, pe to this country, taken by Mr. Moncreaff at Portsea; also Dyschirius angustatu Hydroporus unistriatus, and H. minutissimus, all rare or local British species.

Major Parry read the concluding part of his paper intituled "A revised Catalogue of the Lucanoid Coleoptera, with descriptions of new species, &c.;" an exhibited a specimen of Nicagus obscurus, a species of doubtful location.

The Secretary communicated some notes by Mr. Trimen on the habits species of Paussida at the Cape of Good Hope.

Mr. Butler read notes on the species of Charaxes of the Reise der Novame with descriptions of new species.

Mr. McLachlan placed before the meeting the MS. of the first part of the Catalogue of British Insects proposed to be published by the Society. This par comprised the Neuroptera in the Linnean sense (consisting of Psocidae, Perlidae Ephemeridae, Odonata, Planipennia, and Trichoptera), and numbered, in all, about 323 species. The Ephemeridae had been furnished by the Rev. A. E. Eaton; the Odonata were compiled from the works of De Selys & Hagen; the others (with the exception of the Perlidae, which were in a very imperfect condition) from Mr McLachlan's various Monographs, with additions and corrections.

ADDITIONS AND CORRECTIONS. BRITISH HEMIPTERA: BY J. W. DOUGLAS AND JOHN SCOTT.

GEODROMICA.

n 5.-LYGEINA.

# FAMILY I.—RHYPAROCHROMIDÆ.

STETHOTROPIS (Fieb.), n q.

Short, broad, oval, stout.

transverse, short, pentagonal; crown (including the eyes) wider than the front of the pronotum, rather convex; face very short, sides slightly curved inwards, apex obtuse. Eyes rounded, projecting laterally. Antennæ slender, 1st joint stout, reaching beyond the end of the face, 2nd slender, slightly clavate. 21 times longer than the 1st; 3rd more slender and less clavate, about two-thirds the length



Details of Stethotropis incana, D. & S.

of the 2nd; 4th thicker than the 2nd, about the same length as the 3rd, fusiform. Rostrum slender, reaching to the posterior coxæ, 1st joint as long as the head, 2nd nearly twice as long, 3rd about as long as the 1st, 4th rather shorter.

orax: pronotum long-trapezoidal, moderately convex, anteriorly contracted to the width of the head but immediately widened and the anterior angles rounded off; anterior margin slightly coneave; sides nearly straight, very slightly sinuate, the margin at first very narrowly reflexed, then gradually thickened and forming a small callus at the posterior angles which are thus obtuse; posterior margin, within the callosities, slightly emarginate. Scutellum long, triangular, slightly convex, sides depressed, apex acute. Elytra: -clavus long, narrow, sides parallel; corium wide, curved outwards, anterior margin not reflexed, the outer nerve incrassated and prominent on the basal half, its posterior course on the disc also considerably raised; membrone short, sub-quadrate, posterior angles subequally rounded, base depressed; of the four nerves the 1st is short and curved outwards, the 2nd, arising near the middle of the bare, is nearly straight, slightly curved at the base; the 3rd, arising at the inner angle, curves towards the 2nd and then slightly towards the inner margin; the 4th arises near the middle of the inner margin and curves parallel to the 3rd Sternum, each segment with a triangular xyphus; meso- and metasternum with a central keel, the xyphus depressed. Legs moderate; thighs, 1st pair incrassated, simple, long-fusiform; tarsi, 1st pair short, 1st and 3rd joints sub-equal in length; 2nd very short; 3rd pair longest, 1st joint longer than the 2nd and 3rd together, 2nd very short.

Abdomen: connexivum wide, sharply reflexed.

Species 1.—Stethotropis incana (Doug. & Scott), n. sp.

Black. Head and pronotum clothed with dense ashy pubescence; elytra dark shaded brown, base and nerves of membrane yellowish-white.

Head appears ashy by reason of the dense decumbent pubescence, antennæ black with fine projecting hairs, apex of 1st, 2nd, and 3rd joints piceous.

Thorax: pronotum covered like the head with dense, appressed, ashy pubescence, closely but distinctly deep-punctured, the callosities smooth. Scutellum less pubescent, with fine, less distinct punctures. Elytra dull, dark brown; clarus on the basal half with three rows of distinct punctures, posteriorly the punctures less distinct; corium in the inner margin, posteriorly, a longitudinal blackish streak, the raised course of the 1st nerve is also dark, the colour spreading posteriorly and outwardly into a blotch which extends narrowly on to the base of the membrane: membrane fuscous, the base (except as above stated) yellowish-white on the outer two-thirds, on the inner 3rd broadly clear, spotlike, with a blackish streak from the corium beyond the base of the 3rd nerve; nerves clear yellowish-white, and a streak of the same colour, sometimes interrupted, between the 1st and 2nd, and 2nd and 3rd. Legs: thighs pitchy-black, tibiæ pale piceous, tarsi pale piceous, the last joint black.

Abdomen: beneath clothed with fine, decumbent ashy pile.

Length 1½ line.

A single individual,  $\circ$ , was taken by Mr. T. V. Wollaston, last summer, at Teignmouth, and kindly presented to us. Dr. Fieber has founded on it a new genus and has sent a drawing of the characters, from which our figure is taken. Its place is near Stygnocoris.

Section 9 .-- CAPSINA.

FAMILY II.—ONCOTYLIDÆ.

Genus 7 .-- Conostethus, Fieb.

Species 2.—Conostethus griseus, n. sp.

3 Dark greyish-green.

Iead yellow, somewhat darker on the sides and leaving an indistinct central line;

the base of the head, and near to each eye, a small brown spot. Antennæck, 1st joint at the base greenish; 4th joint, apex brownish-green, Eyes rplish-brown. Rostrum greenish or yellowish, last joint black.

: pronotum-sides and a central line yellow; callosities brownish-yellow nutely spotted with brown, their posterior margin brown. Scutellum dark eyish-green, anterior portion and a central line yellow, the former darker an the latter, transverse channel brown, interrupted by the central line ytra dark greyish-green; clavus—inner margin narrowly black; corium terior margin as far as the 1st nerve yellow, the colour softened down and ended with the prevailing colour as they approach each other; cuneus Bllow; membrane blackish, slightly iridescent, lesser cell white; cell nerves ellow, outer nerve of the large cell darker, between the apex of the cuneus nd lesser cell nerve and the apex of the anterior margin is enclosed a pale riangular patch, margined with black at its lower extremity. Sternum reenish; mesosternum with a broad dark greyish-green streak on each side f the centre. Legs greenish: thighs next the apex with a short row of ninute brown spots on the upper and under-sides, those on the 3rd pair blaced diagonally towards the base; tibiæ brownish-green or yellow with erect, somewhat spinose, black hairs; tarsi brown, 3rd joint, except the base, and claws, black.

men: upper-side black or brown-black; under-side green; connexivum yellow.

2 slightly paler than the 3.

t: antennæ yellowish or brownish-yellow; 2nd joint brown; 3rd and 4th black, basal half of the 3rd dark brown, apex of the 4th brownish-green.

Elytra scarcely so long as the abdomen. Membrane abbreviated; cell nerves yellow. All the other characters as in the \$\delta\$.

Length 2 lines.

In the appendix to the "Europäischen Hemiptera," p. 394, Fieber cribes an insect as a variety of Conostethus roseus, Fall., to which present bears a great resemblance in many respects, but its stature early one-third larger), rounder head, and different colour of the tra (the two former characters not referred to by Fieber) render it by conspicuous when placed alongside C. roseus.

Taken in some numbers by Dr. Power below Gravesend on and derneath Arenaria maritima, in June last.

AQUATILIA.

ection 5.—Corixina.

FAMILY I.-CORIXIDÆ.

Genus 1.- Corixa, Geoffr.

CORIXA SOCIA, n. sp.

Brown-black, with very fine yellowish lines and markings. Prootum, clavus and corium delicately rastrate. Pronotum with 7-9 244 (March,

lines, mostly entire; clavus with the first five or six lines straight a parallel; corium with short irregular, delicate lines. Palæ, &, twist roundly dilated on the upper side anteriorly; 1st joint of the poster tarsi with a large, sub-trapezoidal, posterior, black spot.

Head: above pale piccous, posterior margin black-brown with a very slightly angumedial prominence; on the crown, posteriorly, two very short, fine, puncta longitudinal striæ, not extending quite to the base. Face pale yellow; fac depression in \$\delta\$, deep, oval, extending forwards nearly to the middle of the eyes.

Thorax: pronotum rounded behind, anteriorly without a carinate elevation, wi 7-9 fine, close, indistinct, slightly undulating, dark yellowish, transver lines, mostly entire, but sometimes shortened and confluent. Elytra: claw with fine, dark yellowish, transverse lines, the first six or seven straigh parallel, then two shortened inwardly, and the remainder less regular, shorte and often turned down at the inner end; corium with very fine, irregula short, faintly jagged, transverse yellowish lines, the posterior inner ang nearly clear of markings; membrane-suture broad, clear yellowish, the color extending round the apex, as a line, on to the marginal channel which is dar livid, in certain lights pale inwardly; membrane with fine, irregular, sub angularly twisted yellowish markings, sparse in the middle, the entire margin black. Sternum black; scrpula pale yellow; pleura black on the base, the posterior half, and a line on the margin of the basal half, pale yellow; para pleura pale yellow. Legs pale yellow, -1st pair, coxa outwardly black, aper yellowish; thighs, at the base, exteriorly with a blackish spot, extending upwards tibiw arcuate, black above, apex yellowish;  $palw, \mathcal{S}$ , the lower margin nearly straight, the upper-side at first much constricted and flattened, then dilated and rounded, turned broadly inwards, and abruptly rounded to the apex, so that the upper surface exhibits a broad screw-form; the colour at first brown deepens to black on the dilated portion and is continued as a line almost to the apex: 2nd pair, core black, apex yellowish; thinks, apical third, especially on the upper-side, fuscous; tibiw pale fuscous; tarsi brown at the apex: 3rd pair, come black, apex yellowish; thighs broadly black exteriorly, less so interiorly; tarsi with long, black cilia, 1st joint at the end with a large black spot extending quite across, sub-trapezoidal, the inner side being longer than the outer, and the upper margin sloping outwards; 2nd joint clear yellow with a very fine black line on the margins.

Abdomen black; connexivum pale yellow: beneath, in \$\delta\$, the basal segments black with the posterior margin and sides pale yellow; the last two or three segments dusky yellow; in the \$\Q2\$ all the segments pale yellow. Length \$2\frac{3}{4} - 3\$ lines.

In the form of the pale, 3, like O. præusta, but differs from that species in being blacker, in the more delicate and shorter character of the lines on the corium, in the darker colour of the middle and posterior thighs, and in the sub-trapezoidal (not quadrate) shape of the black spot on the posterior tarsi.

A few specimens were taken last summer in the district of Strathglass, Inverness-shire, by Dr. F. Buchanan White.

#### CORIXA BOLDI, n. sp.

 $\S$  . Black-brown with pale yellow markings. *Pronotum* with 7-8fine interrupted black lines. Clavus with long, zig-zag, longitudinal in the middle, and short transverse lines on the sides. Corium short, twisted, transverse lines. Posterior tarsi: the 1st joint with ge, apical, black spot, semi-oval on its upper end.

brownish-yellow, fuscous at the base, with a short, punctate, longitudinal stria on each side of the slightly raised middle.

ax: pronotum, clavus and corium finely rastrate. Pronotum posteriorly rounded, anteriorly without a keel, transversely with 7-8 very fine, slightly impressed black lines, the intermediate yellow lines rather wider. Elytra: clavus with long, zig-zag, sharply angulated, longitudinal, yellow lines on the middle, broad at the base, the margins each with a series of short hieroglyphic marks, sometimes connected; on the posterior 4th these marks form irregular transverse lines: corium with short, twisted, angulated, somewhat oblique transverse lines, interrupted on the posterior inner angle by a longitudinal black streak, the angle itself, at the end of the clavus, with a black spot; marginal channel pale yellowish; membrane-suture narrow, dusky yellowish: membrane filled with hieroglyphic yellowish markings, interrupted near, and parallel to, the inner margin by a pale streak, exterior margin black, posterior margin fuscous. Sternum pale yellow. Legs pale yellow: 1st pair, pulæ,  $\mathfrak P$ , cultrate, narrow, acute: 2nd pair, tarsi with a brown spot at the apex: 3rd pair, 1st joint with a large, apical, black spot reaching quite across the joint, the upper end of the spot semi-oval; 2nd joint with a delicate black margin; cilia black.

domen above, black; sides and connexivum pale yellow; the last segment, within the posterior margin, with a brown line; under-side pale yellow.

Length 3 lines.

This species is at once distinguished by the longitudinal direction the peculiar markings on the clavus. By the spot on the posterior ursi it is related to C. præusta, but the form of the spot differs, being ub-oval, instead of quadrate.

Described from a single Q, taken by Mr. T. J. Bold in August, at Josforth, "in a lake into which a burn runs."

### CORIXA SODALIS, n. sp.

Brown-black, with fine pale yellow markings. Pronotum with 3-9 very fine black lines. Clavus; the lines on the basal half straight or furcate; corium with irregular, interrupted, twisted lines.  $Pala, \beta$ , anteriorly, on the upper-side, roundly dilated to the broad apex, outwardly, like the tibiæ, black: tarsi; 3rd pair, the 1st joint with a small triangular, apical, black spot.

246

 $\mathit{Head}$  piecous; facial depression in  $\mathcal E$  , deep, extending forwards to the middle the eyes.

Thorax: pronotum, clavus and corium delicately rastrate. Pronotum round behind; disc with 8-9 very narrow, impressed black lines, the intermedia yellow lines rather broader, the first three or four straight, the rest more less curved downwards, frequently shortened in the middle and confluence Elytra: clavus with fine, pale yellow, transverse lines; on the basal half six seven parallel, mostly entire, but sometimes furcate at the ends, the first thr or four slightly broader than the others; on the 2nd half irregular, broke or angularly twisted : corium with delicate, irregular, much broken and ang larly twisted, pale yellow, transverse lines, sparser on the posterior inner angle leaving there a short, longitudinal black streak; membrane-suture narro clear pale yellow, marginal channel narrow, pale livid: membrane wit minute hieroglyphic markings, the middle more or less free, the margins blace Sternum and side plates pale yellow. Legs yellowish: 1st pair, tibia, 8 arcuate, the upper-side, except the apex, black; pale, &, viewed from the side cultrate, the upper-side anteriorly, broadly arcuate, apex broad, flattened an curved inwards, outside black, but the colour not extended to the apex: cultrate, narrow; slightly curved, apex acute: 2nd pair; thighs, on the bas half, pale, the apical half infuscated, darker on the upper edge; tibiæ infu cated outwardly, tarsi yellowish with a black spot at the end: 3rd pair; thigh pale; tibiæ broadly black on the sides; tarsi yellow with black cilia, 1st joir with a short, triangular, apical, black spot on the inner side, its outer ang generally not extending quite to the black outer margin, but sometime touching it; 2nd joint clear yellow with a delicate black margin.

Abdomen above, infuscated in the middle lengthwise, the sides and connexivum payellow; beneath infuscated in the middle, the sides and posterior margin the segments yellowish.

Length 3 line

By the form of the palæ, ¿, closely allied to C. Wollastoni, bu differs in colour, being brown-black, not brown; in the greater sharp ness, distinctness, and paleness of the lines on the elytra; and especially in the short form of the black spot on the posterior tarsi, which in C. Wollastoni reaches far up the inner side of the joint.

Several examples taken by Mr. Bold in September, at Gosforth "in a lake into which a burn runs."

#### CORIXA COGNATA, n. sp.

Yolk-yellow with black markings. Pronotum with seven very fine impressed black lines, nearly all of them shortened and joined to others Clavus with the first five or six lines mostly straight, the rest irregular Corium with short, thick, irregular lines, posteriorly and inwardly interrupted by a longitudinal streak. Legs yellow, palæ, 3, roundly dilated on the upper-side anteriorly; tarsi; 3rd pair, on the apex of the 1st joint a small, black, triangular spot.

yellow-brown; facial depression, in  $\mathcal Z$ , oval, deep, extending forwards to the middle of the eyes.

w: pronotum with a faint anterior keel and seven very fine, impressed, black, ransverse lines, all, or nearly all, shortened and joined to others, the yellow ntervals wider. Elytra: clavus with the first five or six black lines mostly straight with wider intervals, the rest irregular, angularly undulating: corium with short, thick, irregular, jagged and twisted transverse black lines mostly connected just before the outer ends, (the yellow intervals broader and more irregular in the  $\, \circ \,$  than in the  $\, \circ \,$  ), on the posterior inner angle a short, longitudinal, black streak; marginal channel entirely yellow; membrane-suture yellow, narrow, distinct: membrane with twisted, hieroglyphic markings, subparallel round the margin; margin narrowly black. Sternum entirely yellow. Legs yellow: 1st pair; tibia arcuate, in the  $\delta$  brown above;  $pala, \delta$ , on the upper-side, anteriorly, roundly dilated to the apex, with a brown line on the edge: 2nd pair; tibic embrowned, tarsi with a brown spot at the apex: 3rd pair; 1st joint at the apex, on the inner side, with a small, black, triangular spot, of which the outer angle just touches the exterior margin of the joint, 2nd joint clear, the margins with a fine black line; cilia black posteriorly, yellowish on the basal half of the 1st joint.

lowen pale yellow, the base of the segments, especially in the  $\delta$  , infuscated.

Length 23 lines.

Distinguished from all other species by its yellowness. Comes at to C. sodalis in the character of the palæ and in the form of the ot on the posterior tarsi, but differs widely in colour and in the lder character of the markings on the elytra.

One &, Loch Grienan, Rothesay, September, 1866 (Douglas). One of and two 2, Loch Leven, August, 1868 (Power).

# CORIXA SHARPI, Doug. & Scott.

Of this species, described last year from a single 9 (Ent. Mo. Iag., v, 295), Dr. F. Buchanan White was fortunate enough last July take two or three specimens in the same loch where he found C. lpestris, and we are thus enabled to give the distinctive characters of he male.

3. Facial depression broad, deep, extending beyond the eyes on he frontal prominence. Tibiæ arcuate, narrow at the base, sub-clavate, ongitudinally trigonate, the angles sharply defined. Palæ cultrate, broad, the base narrower than the end of the tibie, the upper margin gradually rounded to the obtuse apex, and auteriorly inclined inwards, the lower margin gradually widened from the base and then slightly sinuate to the apex; seen from the inside, the upper margin, from the base for nearly half its length, is depressed and turned down sharply 248

inwards; outside slightly convex; seen from above, the whole pala a flattened and twisted appearance, resembling one of the blades o steam-ship's screw-propeller.

The following species, in the form and width of the head, in eyes not reaching the posterior margin, in the presence of the fact depression in both sexes. and in the form of the pronotum, recommended the type of Corixa, and approaches Cymatia, and it may hereaft be deemed desirable to establish for it a new genus, which may probabal also include Corixa Rogenhoferi, Fieb

### CORIXA ALPESTRIS, n. sp.

Corixa alpestris, Buchanan White, in litt.

Black, shining. Head considerably wider than the pronoture prominent in front; facial depression in both sexes. Pronotum at clavus delicately rastrate. Pronotum short, angular posteriorly, diswith a distinct longitudinal keel on the anterior half, and about eighindistinct, impressed, concolorous, transverse lines. Clavus and corium with very fine, scarcely perceptible yellowish lines. Palæ in both sexen narrow, very long-cultrate, in the 3, seen from the side, at the base on the upper-side, roundly widened, the dilatation, seen from above forming a long, cordate depression.

Head, including the eyes, much wider than the pronotum, anteriorly convex, i front prominent beyond the eyes, posteriorly, on each side piceous, depressed the middle rather elevated, on each side of which, and along the margin of the eyes, is a row of punctures, other scattered punctures are also on the crown posterior margin sharply raised, extending behind the eyes. Face covered with very long, projecting, yellowish hairs; facial depression in 3 oval concave, extending on the frontal prominence beyond the eyes, in 2 piceous flat, extending only to the middle of the eyes; labrum yellowish-brown.

Thorax: pronotum short, pentagonal; sides short, nearly straight, hinder sides nearly straight, apex obtusely pointed; disc slightly convex, with about eight transverse, scarcely perceptible, slightly impressed concolorous lines (in some examples, in certain lights, the intervals are indistinctly yellowish at the ends); on the anterior half of the disc a distinct longitudinal keel. Elytra: clasus with delicate, undulating, interrupted, transverse lines rarely reaching the inner margin, more distinct at the base; claval suture raised, distinct: corium, clothed with very fine, short, decumbent, yellowish hairs and with delicate, undulating, much interrupted, yellowish, transverse lines, the posterior inner angle almost devoid of marking; membrane-suture obsolete, and the markings continued over it; marginal channel livid black: membrane with markings like those of the corium, short and parallel on the inner side, the margin all round black, unspotted. Sternum: prosternum side lobes pale

yellow; scapulæ pale yellow outwardly; pleuræ obscure yellowish posteriorly, parapleura obscure yellowish (in the Q the light colour on all these sternal lobes is more obscure than in the  $\zeta$  ). Legs: 1st pair black above, dingy whitish beneath; &, thighs beneath, on the lower margin, with a pale, rounded, foliaceous enlargement, which is suddenly contracted at the apex (in the 2 this enlargement is less); tibia arcuate, on the upper side compressed into an angular, longitudinal ridge: palæ very long, cultrate, curved above to a long point, the inner margins with very long, strong, projecting brown hairs; seen from the side the base seems widened on the upper-side in a semi-oval form, seen from above this enlargement has the form of a longcordate hollow with raised edges, projecting at its base roundly on the outer side, and extending nearly half the length of the pala (looking as if a small open shell had been affixed); in the \$\varphi\$ the \$palx\$ are narrower, sub-aculeate, and without the basal enlargement: 2nd pair, thighs fuscous, pale on the basal third and beneath, tibio and tarsi fuscous, posteriorly black, claws fuscous, posteriorly yellowish: 3rd pair, thighs and tibin obscure yellowish, broadly black on the margins; tarsi yellow with black margins, overlaid with very long, black cilia.

blowen above, black; connexirum yellow with black margin; under-side, in the  $\mathcal{J}$ , the straight segments black with the posterior margin distinctly dingy white, the border broadest in the last of these segments, the contorted segments dingy white with fuscous shades; in the  $\mathcal{L}$  all the segments, dingy whitish with narrow paler margins.

Length,  $\mathcal{J}$ ,  $3\frac{1}{4}$ ,  $2^{\circ}$ , 4 lines.

For this fine and remarkable addition we are indebted to the nterprise of Dr. F. Buchanan White, by whom several examples of it were found last July "in a small loch at an elevation of about 2,000 eet on Ben Hearag, Strathglass, Inverness-shire, in company with Dytiscus lapponicus."

In the "British Hemiptera," the following corrections are required:—

Page 57.—Sehirus albomarginatus: the lateral margins of the pronotum and elytra are stated to be yellowish-white, whereas this colour exists on the latter only. Mr. Rye pointed this out to us just after he made the captures noted ante p. 183.

Page 225.—Nysius: "the 3rd, 4th, and 5th nerves connected beyond the base by a cross-nerve forming two cells," should be "the 4th and 5th nerves connected beyond the base by a cross-nerve forming one large cell."

Page 299.—Miridus: "longish-oval; viewed from the side almost a parallelogram,"—insert "head" before "viewed."

LEE: February, 1870.

ON NEW OR RECENTLY DESCRIBED SPECIES OF DIURNAL LEPIDOPTERA.

BY A. G. BUTLER, F.L.S., &c.

Family NYMPHALIDÆ, Westwood.

SUB-FAMILY SATYRINÆ, Bates.

Genus Euptychia, Hübner.

### 1. EUPTYCHIA FETNA, n. sp., pl. 1, fig. 1.

Wings above pale brown: front-wings with two curved ferruginous bands, the inner one crossing the discoidal cell in the centre, the outer one at its external inferior angle; a nebulous ferruginous patch between the median nervules; an interrupted zigzag sub-marginal brown line and a sub-apical blind black ocellus with yellow iris: hind-wings crossed by a central ferruginous line; a macular sub-marginal brown stria and a sub-anal black ocellus with small silver pupil and yellow iris.

Wings below paler, ocelli placed as in *C. Enyo*, but the three inferior ones of front-wings obliterated; a sub-marginal brown chain-line; front-wings with ferruginous bands as above; a line of the same colour on the inner margin of the sub-costal basal swelling; hind-wings with two transverse ferruginous bands, the inner one crossing the discoidal cell just before its centre, the outer one just before its termination.

Expanse of wings, 1 inch, 5 lines.

San Geronimo, Plain of Salama (Hague), one example.

Coll. Salvin.

This beautiful little butterfly will come next to E. Enyo from Cuenca; it is a very distinct species of the Mollina group, and is the fifth Euptychia of that group hitherto described.

# 2. EUPTYCHIA LABE, n. sp., pl. 1, fig. 2.

Allied to E. Myncea, but differing in its lighter colouring, larger and more distinct ocelli, also above in the broader sub-marginal band of the hind-wings below the ground colour is brownish-white; the bands narrower than in E. Myncea, of a deep red colour, the ocelli, though agreeing in their position, differ in their relative size, the black-centred ones being enlarged, the silver-centred ones diminished in size; the dark nebulous discal band is obsolete, giving place (below the ocelli) to a broad ochreous patch; the undulated sub-marginal line (simple throughout in E. Myncea) is geminate, forming an irregular chain, and terminating at the anal angle in a sub-quadrate ferruginous patch.

Expanse of wings, 1 inch, 101 lines.

Calobre and Santa Fé, Veragua (Arcé); Polochic Valley (Hague) ♂,♀, three specimens. Coll. Salvin.

May be placed next to E. Palladia, a species, in some respects, intermediate between it and E. Myncea.

## 3. EUPTYCHIA GULNARE, n. sp., pl. 1, fig. 3.

3. Allied to E. Harmonia, but differing in its greater size and sinuated hindvings; also below in its uniform brown colouring; the central lines (especially of t-wings) placed wider apart and scarcely divergent; the undulated subl line, and the obscurity of the ocelli, which are also more uniform in size. Expanse of wings, 1 inch, 9 lines.

Coll. Salvin.

nama (McLeannan), &, one specimen.

ill come next to E. Harmonia from Quito.

PTYCHIA MAIMOUNE, n. sp., pl. 1, fig. 4.

ngs above dark olive-brown; hind-wings with a black sub-marginal line e third median branch to the anal angle: below paler with two sub-marginal h lines (the inner one undulated); margin and fringe dark brown: frontrrorated with ochreous scales; two central, transverse, dark brown bands ter one oblique), and a disco-cellular striola of the same colour; five discal with ochreous irides, the two uppermost black, the rest brown, the first and lightly smaller than the others, and blind, the remainder with minute white : hind-wings with two somewhat irregular parallel dark brown central ; six large discal ocelli with yellow irides, the fourth brown, the rest black, st and fourth with bluish, the others with silvery pupils, the second and fifth Expanse of wings, 1 inch, 7½ lines. erably larger than the others.

Coll. Salvin. Pebas, E. Peru (Hauxwell), &, one specimen.

This species, though belonging to the most variable group of the s, seems to me to be distinct; it differs from all its allies in the der bands of the under-surface, which in the front-wings are more lar, and diverge more towards the costa than in the other species; ocelli, also, are very distinct, and, in the hind-wings, are so large, they encroach upon the sub-marginal line.

The regularity of the hind-wing bands in the Hermes group proves e a variable character, so that I am inclined to believe that two cies, hitherto regarded as distinct from others, will have to be sunk, , E. Sosybius, Fabr., as a variety of E. Hermes, Fabr., and E. lanta, Butl. of E. fallax, Feld.

E. JARESIA, Butler, pl. 1, fig. 5.

Cistula Entomologica 2, p. 20, n. 2 (Jan., 1870).

3, Coll. Druce. Habitat unknown.

Allied to E. Saturnus, but differing on the under-surface in the sence of any white colouring in the front-wings, and the much eater restriction of the white in the hind-wings; also in the entirely fferent relative position of the central lines.

E. MUSCOSA, Butler, pl. 1, fig. 6.

Cist. Ent. 2, p. 20, n. 3 (1870).

&, Coll. Druce.

Brazil. A very remarkable species of the Quantius group: in the mosske spots upon the under-surface, and in the strongly angulated form f the front-wings, unlike any other Euptychia.

7. E. OREBA, Butler, pl. 1, fig. 7.

Cist. Ent. 2, p. 19, n 1 (1870).

Habitat unknown.

3, Coll. Druce.

The colouring of the under-surface in this insect is very similar that of the species belonging to the Neonympha group of the gen Taygetis: the species comes nearest to E. nebulosa, from which it may be at once distinguished by its greater size, the more slender central lines, and different occillation af the under-surface.

Before leaving Euptychia, I wish to correct one or two error which the re-examination of types and the comparison of longer series of species than were formerly at my command have discovered to me.

The true type of E. similis, described in my monograph in th Zoological Proceedings for 1866, proves to be a modification of I Themis, described and figured in the supplement to my monograp (P. Z. S., 1867; pl. xii, fig. 13); whilst E. similis of the supplement figured (pl. xii, fig. 10) from an example in the British Museum collec tion, proves to be a distinct species, which may now take the name of E. Undina.

Euptychia Pieria (Monogr., p. 463, n. 13; pl. xxxix, fig. 3) is, in all probability, a variety of E. usitata (Monogr., p. 463, n. 11, pl. xxxix, fig. 2).

Family ERYCINIDÆ, Westwood. SUB-FAMILY ERYCININÆ, Bates. Genus Nymphidium, Fabricius.

NYMPHIDIUM LILINA, n. sp., pl. 1, fig. 8.

 $\mathcal Z$  . Front-wings above dark cupreous, intersected by greyish nervures; the basal area striolated with violet scales: a broad oblique snow-white patch upon the costa beyond the discoidal cell, and terminating (upon the second median branch) in two black spots: the anal half of the inner margin irregularly white; a submarginal chain-like series of violet ring-spots, terminating (upon the white internal area) in two black spots; fringe white, black-varied: hind-wings snow-white; base copper-brown; three sub-marginal black spots near the apex: body brown, abdonien ochraceous.

Wings below nearly as above; the copper-brown replaced by dull brown, which, in some lights, shows a cupreous reflection; the violet markings replaced by white; hind-wings with seven sub-marginal black spots; base olivaceous, bounded upon the costa by two black spots; a brown patch upon the costa near the apex. Expanse of wings, 1 inch, 9 lines.

Mexico.

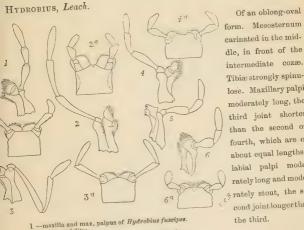
3, one example, Coll. B. M.

This very beautiful species was presented to the National Collection by the late Edward Doubleday, Esq.; it is perfectly unique in pattern, and comes near to no described species of the genus.

British Museum, February, 1870.

### ON HYDROBIUS AND ALLIED GENERA. BY D. SHARP, M.B.

Whilst engaged in the examination of our Hydrophilidx, I have me impressed with the fact that the species of the genus Hydrobius understood by Mulsant, Lacordaire and Duval) are very discordant acies or appearance; and, acting on the impression so gained, I made careful examination of the external anatomy of these ins and the allied genera. The result is that I have found that an angement of the species of these genera, in accordance with their es, would also be a natural one as regards their anatomical and eric characters. The divisions I think it will be well to adopt exactly in accordance with those proposed by Thomson in his kandinaviens Coleoptera." As, however, the characters given for se divisions by that talented author are in some respects incomplete, as his genera have not been yet adopted in such catalogues as have en published since his work appeared; I have thought a sketch of the aracters of these genera may be useful to entomologists. I am not quainted with the exotic species of this family; but hope they will lp to prove the validity of the divisions here adopted.



carinated in the middle, in front of the intermediate coxæ. Tibiæ strongly spinulose. Maxillary palpi moderately long, the third joint shorter than the second or fourth, which are of about equal lengths; labial palpi moderately long and mode-Frately stout, the second joint longer than the third.

Of an oblong-oval

Two British species; fuscipes and oblongus.

2 -maxilla and max. palpus of Helochares lividus.

3 -maxilla and max. palpus of Philhydrus melanocephalus.

4 -maxilla and max, palpus of Enochrus bicolor.

5 -maxilla and max, palpus of Parcacymus eneus. Anacæna globulus. 6a - labium of ditto.

#### HELOCHARES, Mulsant.

Of an oblong-oval form; mesosternum simple; tibiæ feebly spinulose maxillary palpi very long, the third joint not so long as the second, and the fourt not so long as the third, but more than half the length of the second. Labial palpshort, the third joint not quite so long as the second.

Two British species; lividus and punctatus.

This genus, established some years ago by Mulsant, has not been generally accepted by entomologists, and is usually considered a sub division of *Philhydrus*: from this, however, it is distinguished readily by its simple mesosternum and its longer maxillary, in conjunction with its shorter labial, palpi; this last character, a very striking one, seem to have entirely escaped attention up to this time. The species of *Helochares* are flatter than the *Philhydri*, and rather narrower to the front; this and the more developed maxillary palpi give them a facie of their own, easily recognised after it has been once seized.\*

#### 3. PHILHYDRUS, Solier.

Of an oblong-oval form; mesosternum carinated, tibiæ feebly spinulose Maxillary palpi long, second joint considerably longer than the third, and th third than the fourth; the fourth not quite half so long as the second. Labia palpi long and slender.

We have six indigenous species; testaceus, maritimus, melanoce phalus, nigricans, ovalis and marginellus.

Obs.—The figures are drawn from dissections of *P. melanocephalus* in *P. maritimus*, the labial palpi, though similar in structure, are rathe shorter, and not quite so slender, and the mentum is even more rounded in the middle.

#### 4. Enochrus, Thomson.

Of an oval, convex form; mesosternum carinated, tibiæ feebly spinulose Maxillary palpi rather long, third and fourth joints of nearly equal lengths; seconlonger than either of them. Labial palpi rather short.

The single species of this genus, E. bicolor, Payk., has hithertibeen placed in the genus Hydrobius, from which it differs in numerou important characters. It is distinguished from Philhydrus, however only by the differences of the palpi; and, as it has in every respective facies of that genus, if Enochrus be not adopted, it must be considered as a section of Philhydrus.

<sup>\*</sup> In making the above engraved drawings from Dr. Sharp's dissections, I have, moreover, observe that the mentum in Helochares lividus is of a very different structure to that of Philhydraus, havin an acute triangular motel in the middle of its anterior margin. Dr. Sharp (to whom I pointed that and and whose observation it had escaped through the medium in which his dissections were mental an having dried up enough for minute investigation) has verified this by turther observations.—E. C. 4. 4.

### RACYMUS, Thomson.

f an oval, but very short and convex form; mesosternum carinated, tibia strongly spinulose. Maxillary palpi short, second and fourth joints of about lengths, the third rather shorter. Labial palpi short, the third joint not quite g as the second. Posterior femora glabrous, and shining beneath.

P. aneus, the single species of this genus, has usually been associwith Hydrobius; but, independently of its great dissimilarity in it is distinguished from that genus by some evident structural acters; among these may be mentioned its much less developed i, and its glabrous posterior femora. In general appearance, it es near the next genus, Anacæna, from which it is distinguished ts carinated mesosternum, and glabrous posterior femora.

### ANACENA, Thomson.

Of a convex and sub-hemispheric, or oblong form; mesosternum simple, tibiæ ngly spinulose. Maxillary palpi short, the fourth joint rather longer than er of the others. Labial palpi very short, the third joint stout, nearly as long he second. Posterior femora opaque, and densely pubescent beneath.

This genus has also hitherto been associated with  $\it Hydrobius$ , but is tinguished, independently of its small size, by its uncarinated mesornum, and much less developed maxillary and labial palpi. We ve, I believe, three species in this country; and, as they have been where, so far as I know, sufficiently described, I give below the aracters which distinguish them.

A. Globulus, Payk. Sub-hemisphericus, niger, prothoracis clytrorumque marginibus dilutioribus, antennarum basi palpisque testaceis, his articulo ultimo piceo; pedibus rufis, tarsis, præsertim posteriori-Long.  $1\frac{1}{2} - 1\frac{2}{3} lin$ . bus, sat crassis.

Very common in moist, dirty places, throughout England and

cotland. This species is larger, broader, and more convex than the following, nd has the elytra always of a darker colour, except at the margins, nd the tarsi are stouter.

2. A. VARIABILIS. Subovalis, convexus, capite nigro, palpis piccis, articulo ultimo nigro, antennarum basi testaceo; prothorace piceo-nigro, lateribus dilutioribus, elytris vel piccis, vel picco-testuceis; pedibus Long. 11-11 lin. piceo-rufis, tarsis gracilibus.

Var. capite utrinque maculu parva ante oculos rujo-testucea.

Common in England, rare in Scotland.

This species varies considerably in size and colour. It general ands in our collections as *Hydrobius bipustulatus* of Stephens; but, Stephens' description of that species does not accord with the preser insect, and as the species has not yet been distinguished (so far as am aware) by foreign entomologists, I have been obliged to give it new name.

3. A. BIPUSTULATUS, Stephens, Ill. Brit. Ent., ii, 133 (Hydrobius)
Late ovalis, sat convexus; capite nigro utrinque macula magna ant
oculos testacea, antennarum basi palpisque testaceis, his articul
ultimo piceo; prothorace testaceo, disco plus minusve infuscato
elytris testaceis, nigro-irroratis; pedibus testaceis.

Long, 1— 14lin.

Common in England, and sometimes taken in numbers with the

water-net; but I have never found it in Scotland.

The colour differences in this species are of themselves sufficient to separate it from the foregoing. I would especially call attention to the large marks on the head as a never failing character. Though, a I have stated above, the preceding species is generally called bipustulatus, Stephens, and the present one ochraceus, Steph., yet, as Stephens description of Hydrobius bipustulatus agrees well with this species, and his description of H. ochraceus cannot possibly be applied to it, I have felt no hesitation in changing the name, so as to make it accord with the Stephensian description.

Eccles, Thornhill, Dumfries, February, 1870.

Note on the occurrence in Britain of Tomicus nigritus, Gyll., and Dryacetes alm Georg.—Some time back Mr. Crotch was kind enough to forward on my behalf at example of a species of Tomicus, distinct from any hitherto recorded as British, there Eichhoff, the great authority for that genus. This has been returned as T. suturalis, now considered the female of nigritus, Gyll., which must therefore be added to our list. I captured my specimen in Strath Glass, Inverness-shire Mr. Crotch also informs me that he also forwarded to Herr Eichhoff a specimen of the Tomicus described provisionally by Mr. Rye as T. Marshami, and that it is considered by Herr Eichhoff to be Dryacetes alni, Georg.—D. Sharp, Eccles, Thornhill Dumfries, February, 1870.

Drywcetes alni, Georg.—Without doubting the correctness of Herr Eichhof (who, I presume, possesses or has examined Drywcetes alni) in referring my Tomicus (D.) Marshami to that species, I would simply observe that the tree mentioned by Georg (Stettin. Ent. Zeit., 1856 p. 59) as that in which his insect lives is the alder whereas Marshami was found in beech; and that his description is so unsatisfactory







I G hather defer lith for letter

1 Emptychia Fetna 5 Emptychia daresia 2 Labi 6 Muscosa 3 Cadnari 7. Preba 4 Maimounic 8 Nymphiduum Lilina



zeburg seems to have been compelled to add a postcript, by which (as he e beetle in turns to bicolor, bidens, autographus, laricis and curvidens) he rently still further obscured its affinities, since in no Catalogue until the ion of de Marseul's has it appeared in its correct place in Tomicus or its sub-There is another alni, published by Mulsant in the same year as Georg's but which is sunk as a synonym of Sazesenii, Ratz.—E. C. RYE, 10, Lower elds, Putney, S.W.

ditions to the list of British Coleoptera. - Mons. Chas. Brisout de Barneville, n I sent in 1869 some doubtful species of British Coleoptera for corroboration, ently communicated a list of them to me, from which I am enabled on his ty to add the following to our list :-

gous nodulosus (Gyll.) Schön., Syn. Ins., 75 One of my two exponents of dulus, given to me by the late Rev. H. Clark, who took it, I believe, near el, is undoubtedly that species; the other, obtained from Mr. Brewer, is as otedly nodulosus. I do not know the locality of this second specimen, but formed it was also from Mr. Clark's collection. B. nodulosus was erroneously uced into our lists by myself some years ago, upon an enormous and abraded de of B. lutulentus; and it appears to have escaped record since through some ght, as Mr. G. R. Crotch tells me that he has for some time known that we ooth species in this country; B. binodulus, indeed, being much the rarer of yo, as he had only one specimen of it, taken by Mr. Brewer in the fens.

Cychius (Sibynes) sodalis, Germ., (Boh.) Schön., Syn. Ins., 377 (cretaceus, Bris.). is the S. statices, M.S., of Moncreaff, in "Newman's Entomologist."

Cryptophagus fumatus, Gyll.; Er., Ins. Deutschl., iii, 363. Already attributed ritain, in De Marseul's Catalogue, possibly from the Stephensian reference in ason (Stephen's insect is dentatus). Taken by Mr. Bold in Northumberland. Meligethes fulvipes, Brisout in Gren. Cat. et Mat., 49. This is the "6, spec.

?" of Wat. Cat., from Southend, allied to M. aneus.

Allied to M. picipes, from M. rotundicollis, Brisout, l.c., 56. From Mickleham. h it differs in its thorax being more strongly rounded at the sides, its finer ctuation, and its tibiæ being less strongly denticulated.

I reserve for a future communication remarks upon some other species appaly new to us in this genus, named for me by M. Brisout. Mr. Crotch has very lly sent me a list of British Meligethes from his own collection, also revised by same authority, and which contains at least two other species new to our lists, I not amongst my additions.

M. Brisout also corroborates the Meligethes originally brought forward by as Kunzei; identifies the Couthorhynchus marginatus with 6-jointed funiculus erred to in the last No. of this Magazine by me as C. distinctus, Bris.; and croborates as C. vicinus (sibi) one small and two larger specimens from nthend hitherto referred to that species with doubt by me.-ID.

Localities for Homalota.—The following species of Homalota (with others o common to mention, in all 86 in number) have been taken by me during the st two seasons, chiefly in the London district. All of them have been examined by Dr. Sharp, to whom I tender my sincere thanks, and the names are those Monograph. Most of them are chance captures, and I cannot say I have we the genus thoroughly; had I done so, this list would probably have been long

H. languida, Er., I specimen in a marshy place on Wisley common Weybridge: luteipes, Er., 1 specimen at Sanderstead, in dead leaves: plu Wat., under sea-weed on the coast, Dover: londinensis, Sharp, a few in m places at Lee: oblongiuscula, Sh., in dead leaves, Sanderstead: pagana, Er., specimens at Sanderstead, Wimbledon, &c.: occulta, Er., 1 or 2 specime Shirley: fungivora, Th., at Shirley, Hampstead and Darenth, in dead leave in fungus at Loughton: incana, Er., sparingly, in the neighbourhood of L marshy places: nigella, Er., in company with the preceding, but of more fre occurrence : aquata, Er., under bark at Cobham, Kent (a few specimens) : angu Man., in a sand pit at Shirley, and in dead leaves on Mickleham Downs: lin Gr., under bark of various trees at Shirley, Mickleham, Cobham, and Dar debilis, Er., several specimens in a marshy place at Lee: fallaciosa, Sh., 1 spe in a marshy place at Lee, Kent (mentioned in Dr. Sharp's Monograph as occur only in Scotland): rufotestacea, Kr., 1 specimen at Mickleham (Ent. Mo. vol. v., p. 218) : gemina, Er., in marshy places at Lee: soror, Kr., sparing Weybridge, Hammersmith, Loughton, and Mickleham: exilis, Er., a few spec at Weybridge and Wimbledon: palleola, Kr., 1 specimen in dead leaves at Da Wood, last autumn (the only locality given in Dr. Sharp's monograph is Reight validiuscula, Kr., at Mickleham, in dead leaves (the only locality giv Dr. Sharp's Monograph is Edinburgh): subanea, Sharp, in fungus, at Mickle triangulum, Kr., 1 specimen at Gravesend, on the banks of the Thames : ign Sh., several specimens at Loughton, last autumn, in fungus and dead leaves recorded from Edinburgh and Shirley in Dr. Sharp's Monograph): boletobic (nigritula, Wat. Cat.), in fungus at Weybridge and Mickleham: coriaria, several specimens in West Wickham Wood, in moss, also at Darenth: sodali. scarce, Weybridge, Mickleham, and Loughton: divisa, Märk., a few specime Weybridge and Mickleham, in fungus: gagatina, Bau. (variabilis, Kr.), in leaves at Weybridge, Birch Wood, Mickleham, and New Forest: nigricornis at Weybridge, in dead leaves : angusticollis, Th., single specimens at Mick and Richmond Park : corvina, Th., single specimens at Weybridge and Mickl and in profusion in fungus, last autumn, at Loughton: atomaria, Kr., in dead l at Sanderstead, 1 specimen: testaccipes, Heer, 1 specimen at Sanderstead, in leaves: oblita, Er., several specimens at Mickleham, in fungus: autumnali. 3 specimens in Cossus-burrows in the New Forest, last July, (only recorded Norwood and Horning in Dr. Sharp's Monograph): inquinula, Er., common in heaps, at Gravesend : flavipes, Gr., at Cobham, a few specimens in vegetable re canescens, Sh., single specimens at Hounslow and Weybridge: celata, Er., specimens at Weybridge, in dead leaves: marcida, Er., very common in fungus in the autumn, at Loughton, Shirley, Darenth and Birch Woods, and Mickle intermedia, Th., at Mickleham, in fungus, rare: cadaverina, Bris., rare, specimens at Weybridge and Loughton: lavana, Muls., 1 specimen at Weybr cinnamoptera, Th., a few specimens at Loughton, in fungus: testudinea, sparingly, at Wimbledon and Mickleham, in leaves: muscorum, Bris., con Darenth, Weybridge, Southend, and Cobham: pilosiventris, Th., 2 or 3 speci cley: subsinuata, Er., a few specimens at Hampstead and Shirley, in dead corphana, Er., 1 specimen near Weybridge,—G. C. Champion, 274, Walworth S., 29th January, 1870.

apture of Rhizophagus cribratus in quantity.—Whilst pupa-digging round an k in Studley Park this afternoon, I came upon a piece of decayed fungoid h on the tree root, about an inch in diameter, covered with R. cribratus. In being rather cold work, I put the whole piece in a pill-box, and now flud reontained more than sixty specimens of the beetle.—EDWARD A. WATERHOUSE, ains' Hall, Ripon, March 7th, 1870.

Notes on the aconomy of Abdera bifasciata.—My attention was one day attracted rotten oak-stick lying on the ground, from the circumstance that the bark on side presented numerous minute circular holes irregularly disposed. My diate conclusion was that I had come across traces of some Tomicus; but, on ng into the stick, I found that each hole led into a little cul-de-sar, one-fourth e-third of an inch long, lying parallel with the fibres of the wood. This was ously the work of some insect; but, as clearly, not of any of the Hylesinidæ. s further puzzled by the inadequateness of the removed material to have fed sect of the size indicated by the exit aperture. I have not since found any containing these holes so abundantly as this first one; but I soon after d sticks similarly perforated, and almost invariably found the holes associated the presence on the stick of the remains of a fungus. Last spring, I succeeded nding sticks still inhabited by the larvæ that make these holes, and from which ared Abdera bifasciata. The fungus, of which I have mentioned that traces ays accompanied the perforations, is Corticium quercinum, P. The larva of era feeds in reality not on oak-wood, but on the Corticium; and the reason that my stick was so puzzling was, that all trace of the Corticium had disappeared from The Corticium, though certainly not rare, is only to be found in its appropriate itat, which, as far as my observations go, is on the branches of from one to ee inches in diameter that die ard become rotten on the tree. The fungus ws on the under-side of these branches, and though only, I suppose, really e for one season, its dry remains may continue for several years, and I have nd larvæ in it in its second year. Its favourite tree is the oak, but I have

o found it on ash.

Such rotten branches as the Corticium affects are usually broken off piecelal by the wind; and, should they happen to fall when the Corticium is in suitable
addition, the larva of Abdera is easily found beneath it. As I have informed
veral of my correspondents that the Corticium grows on the branches after they
ver fallen, I wish especially to point out that this is not the case; and that,
though the fallen branches only are available in searching for the insect, the
roper habitat of the fungus, and consequently of the beetle, is, I have fully
tisfied myself, on the tree, and their being on the ground is to be regarded as an
isoident.

The Corticium is a thin fleshy fungus of a reddish-chocolate colour, lying flat gainst the bark on which it grows, but of a tougher consistence than its appearance

suggests. When dry it is a thin hard dark-coloured scale, which finally cur and falls off leaving the bark a little altered in appearance, but no doubt adva a stage in the process of decay.

I know nothing of the oviposition of Abdera bifasciata; but, throughou winter, the larvæ may be found of various ages beneath the Corticium feedin those portions of it nearest the bark. Towards April and May they are full-fee each makes its way directly into the wood, usually for a short distance, the sometimes for nearly half-an-inch, and then makes a little cell of its own be parallel with the fibres of the wood, in which it changes to pupa, the entrant the cell being protected by being stuffed with the sawdust removed in its form. The larva turns round with its head towards the opening before assuming pupal state. In emerging I think it usually has to enlarge this opening, perfect insect emerges in July. Though this is the usual habit of the larv often happens that the fungus begins to peel off before they are full-fed. I be this occurs only when the fungus is in its second year of existence. In this the larvæ make their way into the superficial layers of the bark, in which seem to find sufficient nutriment, possibly part of the mycelium of the fungufeed them to their full growth.

The full-grown larva of Abdera bifasciata is 5 mill. in length; its general asp much that of a longicorn, the second segment, into which the head can be retra being the broadest, the head is oval, being rather longer than broad. The st jaws, seen from below, are gouge- or scoop-shaped, with a slight projection near apex, on the upper-side. The labrum is as long as the jaws, rounded, with a f of fine hairs, and a transverse line near its edge which does not seem to indica articulation. The maxillæ have each a three-jointed palpus, and their inner a are produced into an organ of similar shape to the palpus, fringed with short towards the extremity of its inner margin, and not appearing to be jointed to rest of the maxilla, the labium, difficult to observe between the maxillæ, appea be a rounded plate divided into a basilar half which seems to be dotted with obs hairs, and from the margin of which two three-jointed palpi appear to aris which the large basilar joints at least are united to the anterior half of the lab almost entirely hiding it, and the terminal joint (bearing a minute seta) is so that its existence is doubtful: the antennæ are four-jointed, the last joint bear stiff bristle. Beside the last joint, and in front of it, is a rounded body, which either a separate joint or a process of the third joint (I have not satisfied myse this point). Behind each antenna, is a row of three blackish eye-spots, emarginate in front; centrally behind these is a fourth, and at a little dist above this a fifth; these two last are blackish circles, broadest in front. these are several bristles; the body consists of twelve segments, they are so to parent that much of the internal anatomy can be seen, some of it being obscure regularly disposed masses of white fat. There are three pairs of four-jointed the last joint being a brownish claw. Each segment has laterally a stiff loo hair, with two or three smaller ones; the thirteenth segment having two la hairs and several smaller ones. There is a slight projection on the ventral sur of this segment, hardly perhaps of sufficient size to be called an anal tuberc pro-leg. There are ten pairs of spiracles, of which the first is situated below line of the others at the anterior border of the third segment; the second at or border of the fourth segment (this one is smaller than any of the others, but satisfied myself that it is really an aperture, and not merely an approach of tubes to the surface); the others are situated more towards the middle of respective segments, so that the last four or five may be said to be so placed. hirteenth segment, as usual, has no spiracle. The Abdera is infested by meumon, which spins a white silken cocoon in the pupal cavity of the beetle, hich I have not succeeded in rearing.—T. ALGERNON CHAPMAN, Abergavenny, ary, 1870.

Description of the larva of Noctua Dahlii —On September 11th, 1868, I had the ure to receive from Mr. G. B. Longstaff an abundant supply of eggs of this es, that had been obtained from several females in captivity by Mr. G. Norman,

orayshire. The eggs were dome-shaped, flattened, and slightly concave beneath, ribbed reticulated, of a drab colour with a central zone of brown; in a few hours after them they turned to a brownish-slate colour, and the larvæ began to hatch on 13th September and were all out by the 15th.

The young larvæ were at first of a brownish-grey colour, with black heads, and soon began to eat the green cuticle from either surface of leaves of dock, ew crispus and pulcher, showing a most decided preference for these plants, agh supplied with various other kinds of food.

After their first moult they became a paler brown, with their minute tubercular kish dots and hairs distinct; and by the time they had passed a second moult, were three-eighths of an inch long, brown on the back with faintly paler dorsal sub-dorsal lines, the sides down to the spiracles of a rather darker brown than back, the ventral surface and sub-spiracular stripe paler brownish-grey tinged

h bluish-grey anteriorly. These larvæ when about one-third grown were handsomer than at any other iod, their colours being then deeper and brighter. The full grown larva is from and three-eighths to one and half-an-inch in length, longer perhaps when fully etched out, and then it also tapers from the sixth segment to the head which is rrower than the second segment, the thirteenth also tapers and slopes down from back to the anal extremity; otherwise the figure is tolerably cylindrical.

The great feature in the colouring of this species is the contrast of the back th the rest of the body, and, although the pattern was very much the same roughout the numerous brood which I reared, yet I noticed great variations of lour-from whitish-ochreous-through greyish-ochreous, ochreous-yellow, cinmon-brown, rich orange-brown, to the deepest tint of mahogany on their backs.

I shall describe one of the varieties as typical of the greatest number. The cound colour of the back down to the sub-dorsal region, bright ochreous, delicately eckled with darker ochreous-brown; on each segment from third to twelfth, more less distinctly appears a diamond shape of ochreous-brown, with its edges gently anishing into the ground colour; the dorsal line is of the ground colour between wo lines of very dark brown, though in full grown examples it is seldom unaterrupted, being visible only at the beginning of each segment, and thence bliterated by the brown diamond.

The sub-dorsal line is thin, rather paler than the ground colour, edged above

at the beginning of each segment with a thin black streak, which is general clined to end in the slightest possible curve just at the lateral point of the diamond: this diamond form is but obscurely and vaguely represented on the and fourth segments, and the last of the series is on the twelfth, where it be little more than a triangle, while the pale sub-dorsal lines and their black edgings are there continuous, and become united by both crossing transverse end of that segment; on the thirteenth segment the dorsal line only is disting

The ground colour of the sides grey or brownish-grey, tinged anteriorly bluish-grey, the space between the sub-dorsal line and the spiracles is very the freekled with dark grey-brown, forming a dark longitudinal side band in agree contrast to the back; the sub-spiracular stripe is pale greyish, like the versurface, and only to be distinguished from it by its upper and lower edges belittle paler than the rest.

The head is rather pale brown; the second segment has on the back a da brown velvety patch or plate, rounded behind and margined in front with darker brown. The tubercular dots are black, rather small, but rendered spicuously distinct both on the back and sides by a small circle of pale ground on surrounding each of them; the spiracles also are black.

The winter of 1868-69 being of a mild character, and the food-plants en obtainable, about sixty of these larvæ continued feeding, and reached their growth before the end of 1868, the most advanced spun up between dock leaves November 14th, and others quickly followed; somewhat to my surprise they refute enter the earth, but, on being supplied with moss, for the most part hid the selves in that, constructing very slight cocoons.

The pupe is quite of the ordinary Noctua form; at first it is a pale green colour, and changes in a couple of days to brown, and finally to dark brown, and very slightly attached by the tail to a thread of its cocoon. This portion of a brood, having all become pupe by the end of December, did not remain long in the state, but began to appear as noths as early as January 19th, 1869, and so on intervals, until April 29th, by which time I had bred twenty-six  $\delta$  and twenty-sew  $\xi$ : however, a large proportion of them were more or less crippled in their wing and very dingy in colour, though some curious varieties occurred; but, as a wholehow were not fine examples.

The remainder of the brood meantime had hybernated, some of them no more than two lines in length, others nearly half-an-inch, and many of them died of during the winter; but, on the approach of April, the survivors began to feed, and by the 10th of May they were full grown; they also preferred spinning themselves up in moss or in dock leaves to entering the earth.

The perfect insects, and they really were very perfect and fine, forty-five in number, appeared at intervals between June 4th and July 11th.—WM. Buckler Emsworth, February, 1870.

Comparative notes on the larvæ of Xanthia cerago and silago.—Not until the season of 1869 have I had a good opportunity of really knowing the difference between these two species in the larval state, and, for this reason, I never till then had both at the same time, but only one or two of either at long intervals, so that in my recollection they had somehow got to be so much alike as not to be known

rom the other. No doubt this confusion had arisen in part from my having of or three figures at different times of solitary examples too far matured; perience having demonstrated that when they are full fed, or nearly appeared that condition, their distinctive characters have faded away, and their tion is then hopeless. I have therefore thought that a description of both id silayo may be of use to some, who perhaps, like myself, have hitherto the to distinguish the one larva from the other as they chanced to come strice.

sincere thanks are justly due for the kindness and liberality I experienced 9th of April from Dr. F. Buchanan White, of Perth, and on May the 4th of George Baker, of Derby, they having both sent me an abundant supply of atkins containing young larvæ of both species; and I may mention that orth these larvæ all fed and throve well on sallow leaves, and the moths appropriate the 30th of July to the 14th of August.

both species the body of the larva is cylindrical, having the segments plump ply defined, and tapering a little anteriorly; the head decidedly smaller e second segment; the hinder segment tapering also, and the anal pro-legs ose together beneath its extremity.

te larva of cerago has on the upper-surface, as far as the black spiracles, a colour of reddish-brown or purplish-brown, and beneath the spiracles a much int of the same; the ventral surface pale greyish-violet with a slight tinge of green on the anterior segments; the whole upper-surface is freckled with rown excepting the segmental divisions, which, when stretched out, are seen infreckled, and of rather a violet tinge.

the dorsal line when visible is pale brownish-ochreous, often obscured by the wirk brown lines that enclose it, and these often run together in a dark brown to the beginning of each segment, are lost in the middle, and re-appear at the for, on the middle of each segment is a diamond shape of dark brown composed ckly aggregated freckles: the sub-dorsal is a dark brown freckled line forming apper boundary of a broad side-band of dark freckles, extending to the cles, which are situated on its lower edge; the sub-spiracular region, belly, and are faintly freckled with pale brown; the head is dark brown, the second seghas a black velvety collar or plate rounded behind, on which the sub-dorsal appear conspicuously whitish or pale ochreous, with sometimes a faint indicator of a dorsal line on it; the anal tip is often similarly marked; the tubercular are often distinctly visible on the back in three pairs on each segment (two being the usual allowance), scarcely paler than the ground colour, and ringed dark brown.

When young, some larvæ of this species are much darker, with the marks and kles almost black; but, as they increase in size, they become paler. In short the inct series of diamond shapes down the back, and the broad dark band along the s, are characters that effectually distinguish this species.

The larva of silago, though of similar size, form, and general aspect of colouring, when closely scrutinized, presents to view a different design in the ornamenta-

The freckling on the back extends on either side as far as the sub-dorsal region, ming on each segment an irregular squarish shape, quite uniform in depth of

264

colouring, with the dorsal line only just indicated at the segmental divisions: sub-dorsal region forms the upper boundary of a very broad stripe of paler freely followed by a much narrower and still paler one, and then a broad one of sim depth of colour to the back, but with more of a violet hue: the rest may be scribed in the same terms used for similar parts of the larva of cerago.—ID.

Note on Anthrocera filipendulæ. - From larvæ of this species collected dur last July at Branscombe, which is situated between Seaton and Sidmouth, I h the perfect insects in August; and, as the under-cliffs at Branscombe are very m exposed to the sun's rays (being famed for the production of the earliest crops potatoes in the West of England), I am half inclined to call this a second bro induced by locally exceptional heat: of course I do not venture to speak at decidedly on such slender evidence; only, having heard a similar opinion express once or twice before, I now put it forth to invite criticism on it .- J. Helli Exeter, March, 1870.

Remarks on the habits of Liparis salicis. - Mr. G. T. Porritt, of Huddersfie has kindly communicated to me the result of his experience in breeding Lipon salicis, which by no means agrees with the statement of Von Prittwitz and Rössi that this species hybernates in the egg. Mr. Porritt has always found that the eg are laid in July or August, that the larvæ are hatched in about three weeks, a then feed and grow very slowly indeed until the approach of winter, when ear spins for itself a small white cocoon, in which it spends the whole of the wints coming forth and re-commencing to feed as soon as the willows and the poplars com into leaf in the spring. This, at least, is the habit of the species in the north England, and it may be only a proof of the inveterate insularity of the Britis (moth) refusing to adopt continental ways; but Mr. Porritt suggests, that the fac of the parent moth covering its eggs thickly with a crystal-looking substance ma have led to the supposition that they were intended to be thus protected through the winter; and this supposition may have been strengthened by the discovery of the young larvæ in the spring still so very small, that they might be thought to have been lately hatched.

Can any one help us to settle the why and wherefore of this difference between the Continental and English observers in their accounts of Liparis salicis?

Mr. Porritt also mentions (as exceptional facts) that he once had a brood of Polia chi, which were hatched two or three weeks after the eggs were laid: and that on another occasion he bred Orgyia antiqua from eggs deposited in the previous part of the same season.-ID.

 $st_{f a}$  \* Von Prittwitz remarks that L. salicis occurs in Silesia in immense swarms; referring also to a recorded observation of Zeller's of its having occurred as late as October.

Ratzeburg (Forst-Insekten) says that ordinarily the eggs do not hatch till spring, but that some occasionally do so in the autumn.

Boisduval relates that "the little caterpillars emerge from the egg at the end " of April. The eggs are covered by a shining white plaster, which may be trivially "compared with spittle. In localities where the species is common, it is possible "to greatly diminish its numbers by picking off these shining masses, each of which

<sup>&</sup>quot;encloses an almost entire brood."

ording to these remarks, we think it possible that the habits of the British as related by Mr. Porritt, differ somewhat from those of the species as I on the continent; yet Ratzeburg shows that the rule of hybernating in is not invariable. Perhaps observers in other parts of our kingdom will neir experiences with this insect.—Eds.

narks on Cirrhædia æerampelina, especially with regard to its winter con-On perusing Mr. Hellins' list of Macro-Lepidoptera that hybernate in the te (see p. 222), I find one or two species mentioned therein which do not pass the winter in that state in some places, though I am told they do so in Avoiding those species that have already been the subject of controversy, say that, in the Isle of Man and Denbighshire, North Wales, Cirrhædia elina appears in the imago-state in July and August, the eggs hatch in the a, and the larvæ grow to about three-eighths of an inch long before the , then making slight silken hybernacula amongst the moss and lichens. nay be taken now (March) by those who know their habits; and at this season m three-eighths to half-an-inch long, stout, grey, irrorate, and rather rugose lose, the face black, the anterior segments with black horny plates. In April wake on some warm day, begin to eat ravenously, and seem to swell out and d rather than grow, and so rapidly as to make the increase in size almost to the observer. Should the weather change to cold, they again become int, but if not, they soon go down and make a slight cocoon, in which they n a long time before assuming the pupa-state. About June they will be found rysalis, or oftener dead, which latter I have seen to be the case both in conent and at large. Isle-of-Man specimens vary from bright yellow with faint al band, to rich dark brownish-ochreous, the central band only indicated by two narrow lines. I have seen French examples unicolorous like this latter form, Il the Welsh specimens are richly coloured, and the veritable centrago of orth. With regard to O. upsilon I have repeatedly taken its larvæ at sugar in l and May, almost full-fed, but this is no proof to my mind that it is always, at places, and under all circumstances, in the same condition at the same time; her do I doubt that in some places C. xerampelina deposits its eggs in August, ch hatch in the following April, as stated at p. 222, though I have never found n do so.-C. S. Gregson, Fletcher Grove, Stanley, Liverpool, March 2nd, 1870.

What are Perla bicandata of Linné and P. maxima of Scopoli?—An attempt to a more definite knowledge of our Perlidæ for the forthcoming Catalogue of British propera has resulted in the conviction that this family must at present remain a very unsatisfactory condition, and with, so far as I can see, no immediate spect of amendment. Yet, some interesting questions have occurred to me; and, ong others, those of the identification of Phryganea bicandata of Linné and P. wima of Scopoli. The name bicandata has been applied by different authors almost all of the larger and more common European species, the description ring no certain clue to what was intended. In 1839, Mr. Newman, who formerly indied these insects assiduously, in his "Synonymy of the Perlites" (Mag. Nat. ist., N. S., vol. iii.), identified it with the largest European species, now generally nown as P. bipunctata of Pictet, adding the remark—"that Fabricius and all

266

"subsequent authors have entirely mistaken the Phryganea bicaudata of Lim" will be perfectly evident to any entomologist who will take the trouble "examine the Linnæan specimen, now in possession of the Linnæan Socie Notwithstanding this assertion, Pictet in his "Perlides" did not feel justifie considering the matter as settled, and named the species "bipunctata." I examined the Linnæan Cabinet, and find therein no insect that has any claim to considered a type of bicaudata. It is true there is a label "bicaudata," but in handwriting of Sir J. E. Smith and not of Linné. It fact, it is one of the nume cases in which the insects added by Smith, and labelled by him, have been mists for actual Linnæan types. The insect is very old, and I will not affirm it is bipunct but by the side of it (without labels) stand an imago and larva certainly of species. Hence the name bicaudata remains as unsettled as ever, and will probe sink quietly into oblivion, unless some Swedish entomologist can succeed in instating it. I may add, that bicaudata of Zetterstedt (Ins. Lapp., 1058), Lin fellow-countryman, is evidently Dictyopteryx microcephala, Pictet.

And now, as to maxima of Scopoli (Ent. Carn., p. 269; 1763), a name that also been variously applied. Herr Brauer in his "Neuroptera Austriaca" give as a synonym of abiominalis, Burm., without according to it the right of prior thus indicating doubt. Scopoli himself cites bicaudata of Linné, and yet applience name. That maxima is really the species described by Pictet as bipunct appears to me most probable from his description of the imago, and absolut certain from that of the larva, for he had bred the species. I have no hesitati therefore, in adopting Scopoli's name. The species occurs in all the mountain regions of central Europe, and surpasses any other in size. As British, I have present seen only a Leachian example in the British Museum, labelled "Dartmod and some smaller and somewhat doubtful specimens in the Entomological C collection, probably taken by Mr. Newman at Leominster, but think it proba that other examples are extant, and that the insect referred to by Curtis as grandis is the same species.—R. McLachlan, Lewisham, January 8th, 1870.

Entomological Society of Newcastle-on-Tyne.—We are requested to notice the on the 1st of February, a meeting was held at Mr. Johnson's, 48, Dean Street, the purpose of establishing a Society in that town, when about 20 Members joint The Secretary is Mr. Hamilton, of 13, Union Street. We believe the Society cosists chiefly of working men, many of whom are beginners, and they would grateful for larvæ or eggs of Lepidoptera. From the best source, we hear that taste for Entomology and Natural History in general is gradually springing up Newcastle.—[Eds.]

Entomological Society of London, 21st February, 1870. A. R. Wallace Esq., F.Z.S., President, in the Chair.

M. M. Schiölte, of Copenhagen, and von Siebold, of Munich, were elected. Honorary Members, and Messrs. G. T. Porritt, of Huddersfield, and B. J. Lucas, Tooting, Subscribers.

Mr. Hunter exhibited a *Plusia* from the New Forest, which he thought might be *P. ni*, recently introduced into our lists (interrogationis? Eds.).

Mr. Müller exhibited a dipterous gall on the flowers of Tanacetum vulgars sent to him by Mr. D'Orville, of Exeter. This gall consisted of hypertrophied discretes, which were raised far above the level of the others.

Pascoe exhibited Nepharis alata, of Castelnau, from King George's Sound, marked that it was identical with the recently described (Tr. Ent. Soc. N. s) Hiketes thoracicus of King.

discussion took place on a question of nomenclature, raised by Mr. Pascoe, ared that Dejean, in 1834, proposed the generic term Diurus, but gave no tion. This genus had been generally adopted, and even figured by Westwood, description had actually been published until 1862, and then by Mr. Pascoe. But, in 1852, Motschulsky had described another genus under the hybrid diurus, recently corrected to Diurus by Gemminger and von Harold. Mr. therefore enquired whether it would not be better to impose a new name in Dejean's. The opinion of the meeting seemed to be that, having regard to

culiar circumstances, it would be inadvisable to adopt that course.

r. Butler read a paper "on some Butterflies recently received by Mr. Swanzy
Test Africa."

h March, 1870. F. P. Pascoe, Esq., F.L.S., Vice-President, in the Chair. ne Rev. R. P. Murray, of the Isle of Man, and M. J. C. Puls, of Ghent, were 1 Members.

rofessor Westwood exhibited a series of specimens of Locusts from the Hope m, in connection with the question raised at previous meetings as to which he real migratoria of Linné. It appeared that there were two closely allied can species, differing in the form of the pronotum. These had been ded and figured by Fischer (Orthop. Europ.) as migratoria, L., and cineruscens, with which latter Christii of Curtis was identical). The specimens bearing mue migratoria in his possession were mostly very old, one, perhaps, having god to Donovan; they seemed to be Fischer's cineruscens, but Professor wood thought that these should really bear Linné's name – certainty being ainable, tradition should supply its want.

Ir. Smith held the opposite view, and had communicated with Professor Stal, nekholm, who informed him that Fischer's migratoria was the only species 1, to his knowledge, had been taken in Sweden (Neither of these must be unded with the recently exhibited peregrinum.—Eos.).

Mr. Stainton exhibited a bred specimen of Cosmopteryx Lienigiclla from larvæved from the Island of Oesel. He had also bred a British example from a larva i near Cambridge.

The Rev. H. S. Gorham exhibited (through Mr. Janson) an example of Sunius ctus, a species new to Britain.

Mr. Müller exhibited a large gall, like an acorn or olive, on the leaves of a less of Gnetum from India.

Mr. Janson exhibited a collection of Butterflies sent by his son from Nicaragua.

Dr. Wallace exhibited Herminia derivalis and a variety of Melitwa Athalia ured by Mr. Harwood, of Colchester.

Dr. Wallace also exhibited a collection of silk-producing Siturniw and their ons, with specimens of manufactured silk; and urged upon the meeting the sity of extending this branch of industry in this country. He had found  $\mathcal{E}$  ernyi  $\mathcal{E}$  united, and had also found  $\mathcal{E}$  Pernyi in copula with  $\mathcal{E}$  Cecropia, pphemus, and Yama-mai. Eggs produced from the union of Fernyi and Yama-mai had proved fertile; the cocoons and larvae were more like those of the  $\mathcal{E}$  ent than of the  $\mathcal{E}$ .

Professor Westwood read "Descriptions of new species of Pselaphida.

# DESCRIPTIONS OF NEW GENERA AND SPECIES OF HETEROMERA

BY F. BATES.

# Family TENEBRIONIDÆ. Sub-Family TENEBRIONINÆ.

EXERESTUS, n. g.

Mentum concave on its outer face, transverse, truncated in front, the sides little rounded anteriorly, thence slightly contracted to the base: labium prominent transverse, rounded in front and notched in the middle : last joint of labial pale briefly securiform: inner lobe of maxilla not (or obsoletely) armed at the tip densely clothed with long, setiform hairs: last joint of labial palpi broadly securi form: mandibles notched (at the outer side) at the end: labrum very prominent vertical, transverse, the angles rounded, sinuous in front: head very large and very long (over 3 lines); widest-and much prolonged-behind the eyes, somewhat abruptly terminating in a short, thick neck: epistoma strongly declivous-or bent down in front, elongate-trapeziform; a broad, deep, semi-circular notch in the fore margin revealing the membrane attaching it to the labrum; faintly separated from the front by an arched impression, which is interrupted in the middle: eyes small transverse, very narrow, scarcely notched in front, very distant (13 lines) from the prothorax; a slight, angular depression at the posterior corner of each eye, and another, much larger, deeper, and oblong, in front; these depressions give slightly the appearance of a supra-orbital ridge interrupted in the middle: antennæ shorter by one-fourth than the head and prothorax; depressed; joint 3 nearly as long as 4 and 5 united; 4-8 sub-equal, sub-obconic; 9-10 shorter; the terminal joint is wanting in the only example I possess of this genus: prothorax scarcely wider than long, somewhat convex; narrowed in front and behind; slightly rounded at the sideswhich are margined and crenulated; truncated in front-which is faintly margined at each side only; the fore angles rounded and depressed; base sub-sinuous, finely margined, the angles small but distinct and forming right angles: scutellum strongly transverse and convex; elytra oblong-ovate; scarcely broader than the prothorax at the base-which is margined and almost squarely truncated; convex; gradually declivous behind, the apex sub-acute: epipleural fold entire behind; mounting to the shoulders, where it forms a prominent angle; gradually narrowing from base to apex: legs rather long; femora a little swollen in the middle and compressed; the four front tibiæ slightly curved at the end; the hind a little sinuous; all provided with two short, acute spurs and tomentose within, at the extremity: the 1st joint of the posterior tarsi elongate: intercoxal process rather broad, rounded in front : metasternum somewhat short : mesosternum declivous, strongly concave in front : prosternal process not prominent, rounded behind : body wingless.

A genus remarkable by the form and size of its head—the cheeks being enormously extended in length; the declivous epistoma (placing the labrum in a *vertical* position): the small, narrow eyes—so distant

<sup>\*</sup> I use the word cheeks for the sides of the head behind the eyes: it is frequently, but most improperly, used for that projecting portion, in front of the eyes, which partly surrounds the base of the antennary orbits).—F. B.

e prothorax. The metasternum—so much shorter than usually in this sub-family, would seem to connect it with the Cælometo-hrough Polypleurus); but it unmistakably belongs to the present nily, the remarkable notch in the anterior margin of the epis-21. II, fig. 1a) clearly connecting it with Zophobas. Perhaps the ngular feature is the absence of the long hook, or claw, to the obe of the maxillæ.

# E. Jansonii, n. sp. (Pl. II, figs. 1 and 1a).

ngth 12 lines.—Elongate; entirely of a dull black, with a slightly bluish head and prothorax impunctate; on the latter a transverse, sinuous ima at the middle, near the base, and one or two others smaller, near the hind elytra, each with (besides a short sutural sulcus) nine well-marked longituulci; these are regularly and closely impressed with rather large, rounded res, which nick their sides; the intervals—save the first—are narrow, condimpunctate; the 1st is joined to the 7th near the apex, the 2nd to the 6th, a 3rd to the 5th, enclosing the 4th; the 8th is shortened behind, and—as the 5th and 7th—joined on to the 6th a little before attaining the shoulder: side, legs, &c., glossy black; the abdomen very faintly longitudinally ed, and sparingly and minutely punctulate.

Hab. Nicaragua, Chontales.

Discovered by Mr. E. Janson, Jun., to whom I dedicate it.

### HIPALMUS, n. g.

From Zophobas the present genus differs in having the last joint of the labial briefly securiform; the eyes smaller and much narrower; the antenne shorter touter, with joints 9—10 transverse, 11 obliquely truncated, the outer apical produced; the prothorax relatively shorter and broader, the lateral margins dated: the elytra relatively shorter, ovoid, much more convex, widest behind middle, somewhat abruptly declivous behind, and more pointed at the : the legs relatively stouter, the tibiae scarcely perceptibly curved: the metasm much shorter, being no longer then the 1st abdominal joint in its shortest: the intercoxal process relatively broader and more rounded anteriorly: the ernal process much more strongly produced and pointed behind; and the mesoum sub-horizontal. The body is apparently wingless.

The majority of the above characters were pointed out by ordaire (Genera, v, p. 378, note) when stating the advisability of sting it into a distinct genus. The more convex form and the elytra dually widened from the base to beyond the middle, and abruptly livous behind, give quite a different facies to that of Zophobas, to leth, however, the present insect must be closely related, notwithending its short metasternum. There is a pecularity in the mentum ared by the present genus with Zophobas), which has its outer

face more or less strongly carved out, or excavated, anteriorly and the sides, leaving at the middle a more or less cone shaped, outward projecting piece (with usually its apex broadly rounded), havi somewhat the appearance of a secondary or double chin.

The type of the genus is the Tenebrio costatus of Guérin, which briefly re-characterize (Pl. II, fig. 2).

HIPALMUS COSTATUS (Tenebrio), Guérin, Voy. de l. Coq., Enton p. 97, Ins. pl. 4, fig. 5 (Zophobas sulcipennis), Dej. cat., p. 22

Length  $8\frac{3}{4}$  to 9 lines.—Entirely of a dull black with—on the elytra, a slight bluish bloom: head very coarsely rugose-punctate: thorax with a few larg scattered punctures, mostly distributed on the disc; a small fovea at each sid somewhat anteriorly; another, much stronger and transverse, at the middle, near the base, and one, more rounded, at each side of the latter; these basal fovence depressions form between them two short lobes which are squarely truncate behind and within the margin: elytra each with eight well-marked coste, the alternate ones being more elevated; the 2nd more especially so at the base, when it is united with the 4th, and also with a short, oblique, sutural one; the interval between these costa are concave, and each has a regular row of somewhat trans verse punctures; both costæ and intervals are sparingly and minutely punctulate under-side, legs, antennæ, &c., concolorous.

Hab. Peru.

# SUB-FAMILY CNODALINÆ.

NAUTES\* ÆNEUS, n. sp.

Length 3\frac{1}{2} lines.—Entirely of a rich, metallic olive-green; moderately convex; head and prothorax sparingly and finely punctured; the former without any impressed lines or foveæ on the crown between the eyes; the latter with two shallow basal foveæ, and several others, more obscure, at the sides: scutellum smooth; elytra finely striated, the strice faintly and remotely punctured; the lst and 9th (which is altogether marginal, and almost lost in the reflexed edges of the elytra) are joined together near the apex; the 5th and 6th are united at about two-thirds their length, and from the point of union is sent forth a single stria which is united to the 2nd, 3rd, and 7th further on, or nearer to the apex; the 4th is a little shortened behind, and the 8th is strongly abbreviated at both ends; intervals flat and smooth: under-side, legs, and antennæ pitchy-black, the latter with a slightly reddish tinge: abdomen longitudinally wrinkled.

Hab. Nicaragua, Chontales.

Discovered by Mr. E. Janson, Jun.

Smaller than N. fervidus (Pascoe, l. c., p. 476), and without the two well-marked, oblique impressions between the eyes; the prothorax more abruptly narrowed anteriorly, the sides more strongly margined and thickened at the edge, the punctuation much finer; the colour quite different, and the whole insect relatively broader and less convex.

 <sup>(</sup>Dej.) Pascoe. Journal of Entomology, il, p. 475.

### NAUTES OVATUS, n. sp.

th 4t lines .- Ovate, convex; shining; of a rich purplish brown with een and purplish-coppery reflections; epistoma broadly emarginate anteaintly separated from the front, and-together with the latter-rather punctured: prothorax somewhat closely punctured, the punctures more on the disc; lateral margins thickened; broadly lobed at the middle of , the angles moderately prominent: scutellum punctured at the sides: eeply striated, the striæ faintly punctured, or nicked at the sides; intervals rex, sparingly punctured: under-side shining reddish-brown, the legs a rker: metasternum with a few punctures at the sides: abdomen strongly inally wrinkled.

ab. "Colombia."

he above description applies to a specimen (labelled "Nautes Dej., nov. g., Colombia") formerly in the collection of Dejean; being one of the new genera proposed by him since the publiof his last catalogue; another example (both form part of the t. Laferté) is a trifle more bulky $-4rac{1}{2}$  lines; a little duller in e, the green, &c., reflections being less apparent; the punctuation e prothorax finer; and the legs and antennæ a shade redder.

### NAUTES ELEGANS, n. sp.

ength  $2\frac{1}{8}$  lines.—Elongate oval; but little convex; entirely of a glossy dark with a slight golden tinge; head rugosely punctured, epistoma broadly inate anterioriy, confounded with the front: prothorax rather closely—save e disc-punctured; the sides moderately margined and but little thickened edges; the fore angles produced; the base moderately bisinuate, lobed in aiddle, having the usual basal foveæ, and another, fainter and oblong, between and exactly in the middle of the base: scutellum slightly punctured at the : elytra but little convex, more gradually attenuated behind than in the eding species; deeply striated, the striæ finely and remotely punctured, or ed at the sides; the intervals sub-convex at the sides and apex, flat on the lle, slightly and transversely rugulose: under-side, legs, &c., shining reddish-

This species forms part of the coll. Laferté; it stands labelled autes elegans, mihi, col. Dupont," but, unfortunately, no clue is en as to its habitat.

### NAUTES EXIMIUS, n. sp.

Length  $3\frac{1}{2} \cdot 3\frac{7}{8}$  lines.—Oblong; convex; head and prothorax slightly rugged, of oppery-brown variegated with patches of vivid green, somewhat iridescent; stoma squarely truncated anteriorly, separated from the front by a broad, wellrked, lunate impression; head rather coarsely punctured, especially between the s: prothorax punctured, the punctures larger and more crowded at the sides;

strongly bisinuous at the base, the median lobe squarely truncated behind angles much produced; broadly channelled at the sides, which are margine edges a little thickened, and crenulated anteriorly, one crenulation-just before angle-being particularly well-marked, forming a positive triangular excision tellum golden-green : elytra convex ; the humeral angle very prominent ; eac nine (besides the usual short scutellar one) rows of close set, large, oblong pun or foveæ, which are connected together, in line, by narrow lines or striæ; post and at the sides these punctures become more crowded and confused, running or less into each other and forming veritable sulci, with narrow, convex between them; the intervals down the middle nearly flat and-apparently-sn it is somewhat difficult to catch the exact colors of the elytra owing to a iridescence, but in a certain light the space, or interval, down each side the and the intervals 3, 4, 7 and 8 appear vivid green, whilst 2, 5, 6 and 9 appear co brown, under-side and legs shining, reddish-brown tinged with golden-green; joints of the abdomen coarsely longitudinally wrinkled and punctured; femo tibiæ closely punctured, the latter golden-brown; antennæ and tarsi reddish-l

### Hab. Nicaragua. Chontales.

The present species exhibits a considerable departure from type, but its differences are not such, I conceive, as to warran erection into a distinct genus. The main points of departure from type are: the head shorter, the epistoma strongly and distinctly parated from the front; the last joint of the labial palpi\* shorter, more produced and rounded on the inner side, thicker (a transsection showing almost a perfect oval); the strongly produced and angle of the prothorax, the lateral edge in part crenulated, the me basal lobe squarely truncated behind; and the totally different sty sculpturation on the elytra. Also one of the novelties discovere Mr. E. Janson, Jun.

#### TARPELA, n. g.

Characters of Nautes (especially of the preceding species): d in having the mesosternum declivous and broadly excavated in front horizontal, and sharply triangularly notched in front as in Nautes) prosternum bent down behind the anterior coxe, then expanded and terr ting in a broad point; the form narrower, more elongate, more paralle more depressed; the prothorax squarer, the anterior angles very street produced—extending nearly to the upper edge of the eyes; and lateral margins strongly crenulated.

#### T. Brownii, n. sp. (Pl. II, fig. 4.)

Length 3 lines.—Oblong; scarcely convex; brown with a slight golden

<sup>\*</sup> Probably only a character of the & .- F. B.

any metallic lustre; head and prothorax punctured, the punctures larger r on the latter; epistoma separated from the front by a well-marked lunate on: prothorax sub-quadrate, but little convex, a little wider than long, sides anteriorly, the fore angles very strongly produced and pointed, very ounded at the sides—which are not margined, the edges neither reflexed nor l, but strongly crenulated; base strongly bisinuate, the angles obliquely—rdly—produced, overlapping the humeral angles of the elytra; two foveae, ach side the middle, near the base, connected by a rather broad, transgittly outwardly curved impression: scutellum smooth: elytra but little an the prothorax at the base, but little convex, sub-parallel, or very widened to three-fourths their length, thence narrowed to the apex; each or ows of well-marked, oblong punctures, the intervals—except at the apex, ey are a little transversely wrinkled, flat and smooth; under-side and legs brown; sterna and abdomen strongly and closely punctured; tibiæ finely ely punctured: antennæ blackish-brown.

b. Nicaragua (Chontales); discovered by Mr. E. Janson, Jun. te this species to Edwin Brown, Esq., of Burton-on-Trent.

#### TARPELA OBLONGOPUNCTATA, n. sp.

gth 3 lines.—Head and prothorax brown, slightly bronzed, closely and unctured, the punctures well marked: prothorax a little convex, base mobisinuate and somewhat strongly margined, hind angles not quite so produced preceding species: elytra shining green with purplish-coppery reflections, a brilliant, purplish-coppery stripe down by the suture; somewhat convex the more expanded at the sides than in T. Brownii; each with nine rows of unctures, which become much stronger and less approximate at the sides; finely punctured, nearly flat on the middle, transversely irregular, or reticulinkled at the sides and apex; the 3rd and 7th intervals, for a short distance eir junction near the apex, are somewhat abruptly elevated, forming two tas, which converge to a point behind, at their junction: under-side reddishunctured, the abdomen being also finely longitudinally wrinkled; legs, a little paler; tibiæ densely punctured; two last joints of the antennæ brown.

b. Mexico.

e present species forms part of the collection Laferté.

### Elomosda, n. g.

tum flat, subquadrate, transverse, angles rounded, very deeply and broadly the anteriorly,\* leaving the labium entirely exposed: the latter prominent, sely cordiform: labial palpi moderately separated at base; last joint a little sub-cylindrical, the apex broadly truncated: inner lobe of maxillæ unlast joint of maxillary palpi somewhat broadly securiform: mandibles truncated at the extremity; labrum prominent, faintly sinuous in front,

the angles broadly rounded, the membrane\* attaching it to the epistoma and prominent: head rather short, sub-vertical, slightly narrowed behind th forming a short, thick neck: epistoma short, broadly and squarely trun front, the sides sub-parallel, separated from the front and from the antenna by a strongly marked semicircular impression :  $\it eyes$  somewhat prominent, tre notched in front; a deep sulcus immediately within, and extending backw beyond the posterior angle of, each eye, gives somewhat the appearance of ra-orbital ridge. Antennæ $-\delta$  —elongate, slender; joint 3 a little longer 4-7 sub-equal, elongate-obconic and slightly nodose at the tips: 8-10 a little gradually widening from base to apex, and-together with 11-studde sensitive pores; 11 nearly twice the length of 10, a little curved and towards the apex (sub-fusiform) which is obtusely pointed: in the ? the a are shorter by one-third, the last joint is sub-cylindrical and rounded at tip thorax sub-quadrate, a little narrowed anteriorly (especially in the  $\delta$  ), sides in separated from the flanks by a very fine raised line; truncated in front, the angles rounded and bent down, very finely margined at each side (but not middle); base subsinuous, strongly margined and somewhat thickened; the angles small but prominent and acute: scutellum moderate, triangular, the curved: elytra elongate, convex, gradually declivous behind, truncate (not marginal electrons) at the base, which-including the shoulders--is about as wide again as the thorax: shoulders prominent but rounded; sides sub-parallel to three-fourths length thence obliquely narrowed to the apex, which is sub-acute: epipleura sinuous, broadest at the base, terminating a little beyond the last abdominal su legs— $\delta$ —long; femora strongly clavate and much attenuated at the base: tibiæ moderately curved, compressed; intermediate arched, and somewhat thick at the end: hind nearly straight: two short, stout spurs may be seen to the ant tibæ only: in the Q the legs are shorter; the fore tibiæ scarcely, the intermed but very moderately, curved: tarsi somewhat villose beneath, elongate, espec the intermediate and posterior; the 3 first joints of the anterior (and intermed in a lesser degree) a little expanded, especially in the  $\delta$ ; the penultimate join all small; the last (especially the intermediate and posterior) elongate: interest process moderately broad and gradually arched to the apex: metasternum elonga its episterna parallel and slightly concave; its epimera very distinct; mesostern horizontal, broadly and deeply notched for the reception of the prosternal proc which is strongly produced and pointed behind.

A genus strongly recalling by its facies certain members of the su family *Helopinæ*; and which, but for its elongate metasternum, I shou be inclined to place near the genus *Hegemona*. Its clavate thigh and long, slender antennæ are quite exceptional in the present sul

<sup>&</sup>quot;Le Conte calls this membrane the clupeut; Pascoe considers it the epistoma; the epistoma and the context of th

y; and the deep furrow bordering, and extending posteriorly ad, the eyes, within, recalls a similar feature in several genera of rioninæ. It must, I think, be placed near Camaria, one species ich, O. spectabilis, Pascoe, has the antennæ much longer and more er than ordinary.

### E. Beltii, n. sp. (Pl. II, fig. 3, ♂).

ength 9½ to 10½ lines.—Metallic bronzed: head and prothorax bronzed-green; rmer sparingly and finely punctured, the latter very minutely punctulate: bronzed-green, with purplish reflections down the intervals, and rich, goldendown the striæ; oblong; very convex; sub-parallel to three-fourths their, thence obliquely contracted to the apex: each with nine well-marked striæ, riæ closely and finely punctate: intervals very convex, not, or obsoletely, ured: the 8th (or outer) interval extending to the apex; the 1st and 2nd ag, and running into, the 8th: the 3rd, 5th, and 7th connected posteriorly, ng the 4th and 6th; the 6th is interrupted at about half its length by the coalescence (at this point only) of the 5th and 7th: under-side and legs at dark green with slight purplish and coppery reflections; tarsi black with mish tinge; palpi, &c., and the seven first joints of the antennæ pitchy-black.

Hab. Chontales, Nicaragua.

dedicate this fine species to Mr. Belt, who discovered it.

Stockdale Terrace, Leicester, February, 1870.

# TWO DAYS' COLLECTING AT RANWORTH. BY CHARLES GOLDING BARRETT.

Tuly 31st, 1869, is a memorable day to me, as the date of my first duction to fens and fen collecting. On that day Mr. De Grey paid our first visit to Ranworth, and to his kind instructions I t that I had any success in collecting; for, as those who share my ous ignorance will not be aware, the ordinary conditions of sucleocling are so entirely absent in the fens, that, at first, one is t tempted to stand still in despair, and wonder how it is possible d anything in such a dreary expanse.

The perfectly level surface presents no shelter from the wind, in so wet a place is almost constantly blowing; the stunted bushes scattered here and there scarcely rise above the level of eds; and only in one or two spots where the alders and sallows been allowed to grow so thickly together as to form a thin (locally called a carr), is there any real shelter;—and here many insects congregate. Most insects, however, peculiar to the fens to frequent the open fen and hide during the day among the long and plants which cover the surface in rank luxuriance.

Considering, therefore, that over the greater portion of the there are no sheltered spots in which insects can congregate at therefrom disturbed,—that any hurried or incautious chase after when trodden up, is extremely likely to result in a plunge to the in water having a bottom of unfathomable mud (a mud not likely disturbed by anyone troubled with sensitive olfactory nerves),—and from the soaked and spongy nature of the soil one's boots are generated by the soil of water, it will be readily seen that fen collecting possibility of the soil one degree commensurate with the value of its resulting the same degree commensurate with the sa

It would be pleasant, were I capable of doing it justice, to a upon the flora of the place, so totally different to anything to be funder ordinary conditions: e.g., the exquisitely lovely grass of Parm (Parnassia palustris). and the scarce and handsome marsh-fe (Peucedanum palustre), the food plant of Papilio Machaon; Clamariscus ten feet high or more in the drains; Typha angustifoli plentiful as its congener; the delicate marsh-fern (Lastræa the teris), so abundant that in many places it is impossible to a constantly treading upon it (and that it is even mowed down for pacl purposes); and the usually insignificant Adders' tongue (Ophioglos vulgatum) growing a foot high among the long grass and Carex, &c.

But I have to detail our operations on July 31st. It was trather late for some of the best insects, but by beating in a carr obtained a few Lithosia griscola and stramineola, and one or two mecerda as well as Scotosia rhamnata; and the fortunate capture of little Bohemannia quadrimaculella kept us working the alder bust for some hours. It was, however, excessively scarce, and so lively as to in no small degree trying to the patience, but we secured about a doze This was one of those days on which insects seem endowed wi preternatural activity, while the eyes and hands that should secure the are unequal to the task.

As it got late in the afternoon a few more specimens of Sericor abscissana turned up on the open fen with Phoxopteryx siculana an Coleophora discordella, and Gelechia atrella was common, and about seasy to catch as a flash of lightning.

Towards sunset, insects were stirring in greater plenty, and wer much more steady in their movements.

Acidalia immutata and Scoparia pallida were common enough, and Crambus uliginosellus and selasellus not scarce, and with early dust Nonagria despecta made its appearance in abundance, buzzing about the bushes in the style of a Miana, and accompanied by Pionea stramentalis, Herminea cribralis, and Chilo phragmitellus.

Later at night we devoted ourselves to working for Lithosiæ at the carr, griseola and stramineola being then common, but muscerdar scarce. Stray specimens of Celæna Haworthii and Hydrelia also turned up.

On a second visit on August 14th, many of the same species were the *Lithosiæ* not quite over; of *muscerda*, even three specimens ared to Mr. De Grey's superior luck (I did not see one); and thecia tenuiata had become quite common among the sallows, ee also *Depressuria conterminella*, *Yeatiana*, &c., were not scarce.

The two species of Hypenodes were occasionally to be disturbed by the long grass, and usually had the wit to fly across the rest to inaccessible places, and Peronea Shepherdana and aspersana and out from among Spiræa ulmaria. Elachista cerussella and lum also occurred rarely among the herbage, and I had the good one to turn out one specimen of Gelechia muscosella, the novelty wered a few weeks before by Mr. De Grey, at Wicken fen.

A stramineola  $\mathfrak{P}$ , fished out of a drain on this occasion, obligingly a batch of eggs, which, under the fostering care of Mr. Hellins, I hope, help to solve the vexed question of the distinctness of this es from griseola, especially as Mr. De Grey had, I believe, the fortune to secure eggs of both species (or varieties).

One curious and rather unexpected morsel of evidence has occurred e. Among the specimens of stramineola taken, were several varieties ag more or less of the ground colour of griseola in irregular patches, forming apparently regular connecting links, but these specimens all faded so much that already they hardly differ from normal nineola, while the typical griseola by their side are just as when a.

I omitted to mention, that, on our first trip, a rough piece of nd by the road side attracted our attention, and, alighting, we eeded to investigate it. Among the short heath Mr. De Grey very secured Sophronia parenthesella, and we found Pterophorus teucrii mon among Teucrium scorodonia.

On a second visit a few days after, I found this plume in great adance, though worn, and secured a few specimens of *Ebulea ascalis* and *Sophronia parenthesella*. A thunder storm was imling; and the plumes, apparently delighted with the prospect, were sing over the *Teucrium* like *Tipulæ*.

Norwich, February, 1870.

DESCRIPTION OF AN UNDESCRIBED SPECIES OF DIURN. LEPIDOPTERA FROM TROPICAL AFRICA.

BY PROFESSOR J. O. WESTWOOD, M.A., F.L.S., &c.

JUNONIA WESTERMANNI, sp. n.

Mas.—Alis suprd nigris, apicem versus magis fuscis; omnibus plaga magn ovatá fulvá pone medium, posticis maculá oblongá suh-costali læte cæruleá, anticis infrà pallide fulvis, margine postico (ad angulum apicalem et pos dilatato) fusco, lituris 5 undatis nigris intra cellulam discoidalem macu duabus sub-mediis punctoque sub-apicali nigris: alis posticis albido-griseis, ma postico obscuriori, puncto ad basin cellulæ serieque punctorum 5 sub-margine nigris, strigis nonnullis fuscis per medium alæ irregulariter extensis.

Expans. alarum anticarum unc. 2. Habitat in Guinea (D. Westermann). In Mus. Hopeiano Oxoniw, Dublinensi, &c.

Specimens of this lovely insect were taken in Guinea by the celebrated entomologist, Herr Westermann, of Copenhagen, by wh the species was communicated to the Rev. F. W. Hope, M. Boisdu and other entomologists, and the specific name adopted above proposed for it by the last named author; but no description l hitherto appeared of it. These were the only specimens hither known of the insect in British or Continental collections. I ha however, just received an interesting communication from Mr. W. Kirby, the indefatigable Keeper of the Royal Dublin Society's Natur History Museum, from which it appears not only that specimens the male supposed to have been collected at Cape Coast are contained in that collection, but that he has also discovered in it a specime which he considers to be the female. It is without a label, but pinne in the same way as the others, "from which it differs strikingly of the upper side. It is brown above, the base darker, the whole of the centre of the hind-wings filled with a broad orange band (much dulled than in the male), which extends to the adjacent portion of the forewings, curving inwards across the cell, where it becomes much more obscure. The orange band of the hind-wings seems to have been edged with lilac-blue, and there are traces of detached bright blue scales in the cell of the fore-wings. There is a row of five black spots towards the edge of the orange on the hind-wings (visible on the under-side in the male also), and continued, in the female, on the fore-wings, although the only conspicuous spot is one near the hinder angle of the fore-wings. Beneath, the female chiefly differs in wanting nearly all the dark markings, and in the orange markings being more suffused, and not sharply defined as in the male."

# ACTERS OF A NEW GENUS AND DESCRIPTIONS OF NEW SPECIES OF ALEOCHARIDÆ FROM BRITAIN.

BY D. SHARP, M.B.

ACTOCHARIS (Janson in litt.), gen. nov.

læ malis elongatis, angustis, interiore spinulis validioribus instructå, pice uncinatå.

maxillares articulo tertio magno, sub-ovali, quarto subulato.

a triangularis, apice bifidâ.

labiales bi-articulati, articulo secundo primo paulo breviore et ngustiore.

breves, antici intermediique 4-, postici 5-articulati, omnes articulis rimis æqualibus.

obsoleti.

rpus elongatum, lineare, depressum. Caput elongatum, oculi minores, nullo



Maxilla and labium of Actocharis Readingii.

modo prominuli, pigmento nullo. Maxillæ malis elongatis, sub-æqualibus; interiore intus basi ciliatå, apicem versus spinulis fortioribus instructå, apice uncinatå; exteriore apice pubescente. Palpi maxillares malå interiore paulo longiores, articulo secundo tertio vix breviore sed multo angustiore, hoc magno, sub-ovali, quarto subulato, præcedente breviore. Ligula lata, triangularis, apice bifidå. Palpi labiales articulo primo sat elongato, secundo illo angustiore, to paulo breviore. Antennæ sat validæ, apicem versus vix incrassatæ, articulis 3—10 sub-trans-

tertio cæteris minore. Thorax haud transversus, basin versus angustatus. thorace breviora; alæ nullæ. Abdomen basi quam apice angustius. Pedes breviusculi. Tarsi breves, anteriores et intermedii 4-, posteriores 5-ati; articulo basali sequente haud multo longiore.

The tiny insect for which this genus is established is, as will be from the characters given above, a most anomalous little crea-

Its appearance and characters leave no doubt that it must be a among the true Aleocharidæ, though in the elongate lobes of the it clearly approaches the Myllænæ, and by the great size of the joint of the maxillary palpi, as well as by the two-jointed labial the Gyrophænæ. On the whole I think it is best placed near a, which approaches Actocharis in more than one respect, as rethe structure of the trophi.

#### EADINGII, sp. n.

letissimeque punctata pubescensque; capite plano, thorace longiore, antice angustato; thorace basin versus angustato, latitudine longiore, medio late lon naliter impresso; elytris thorace brevioribus.

Mas abdomine segmento sexto elongato, late longitudinaliter impresso, apice circulariter emarginato.

This species was taken several years ago by Mr. Reading, subsequently by Mr. Wollaston, at Plymouth: I am sorry that I am able to give particulars as to its habits, but these are I believe very markable, and similar to those of Æpys.

# OCALEA LATIPENNIS, sp. n.

Nigro-fusca, sub-nitida, antennis apicem versus fuscis, basi, palpis, pedibu rufis, elytris fusco-brunneis, capite prothoraceque subtiliter minus crebre, elytris cr Long. 21-23 lin

Allied to Ocalea castanea, Er., but rather larger, darker in colo and with much broader elytra. The antennæ are slightly longer a more slender than in O. castanea, and not quite so much thicken towards the apex; they are reddish-yellow at the base, more or le infuscated towards the apex; the length of every joint is distinct greater than the width. The mandibles and palpi are yellowish, the apical joint of the latter slightly infuscated. The head is black, na rower than the thorax, sparingly and finely punctured. The thorax black, about as long as broad, the sides much rounded in front, the distinctly narrowed behind, the posterior angles obtuse, but more market than in O. castanea; it has an impression at the base in front of the scutellum, from which proceeds an indistinct, fine longitudinal channel the upper-surface is finely but not closely punctured. The elytra are of a brownish or pitchy-brown colour, nearly one-half broader than the thorax, finely and very closely punctured, and delicately and densely pubescent. The abdomen is sparingly and finely punctured, a little yellowish at the apex. The legs are yellow, long and slender.

Found in Scotland, only on the banks of the rivers, in company with Homalota currax, &c. Communicated to me some years ago by Mr. Hislop. I have found the species very rare. Banks of the Nith

# ALEOCHARA FUNGIVORA, sp. n.

Nigra, nitida, pedibus rufis, antennarum basi obscure rufo, elytris brunneis, thoraci longitudine aqualibus, crebre punctatis; abdomine apicem versus sub-angustato, suprà basi haud crebre, apicem versus parce punctato. Long. 2-21 lin.

Allied to A. mycetophaga, Kr., especially by the structure of its nnæ, but not so brightly coloured, with the abdomen less narrowed eds the apex and more sparingly punctured. The antennæ have wo or three basal joints obscurely yellowish, the others pitchy-; the fourth joint is about as long as broad, the fifth to the tenth verse, each one a little broader than its predecessor, the eleventh r stout, pointed, about as long as the two preceding. The head is , black, shining, sparingly and finely punctured, and the palpi ellowish. The thorax is a little narrower than the elytra, its breadth and a half times its length; it is rounded at the sides and narrowed rds the front, tolerably distinctly but not closely punctured. The a are about as long as the thorax, of an obscure red or brownish r, rather closely and distinctly punctured. The abdomen is black shining, obscurely reddish at the extremity, rather narrowed tos the apex, segments 2-5 transversely impressed at the base, and e impressions closely and distinctly punctured, otherwise sparingly tured. The legs are reddish.

Three specimens found in fungus at Eccles.

OBS.—This species, as well as *A. mycetophaga*, is distinguished from neipennis, Kr., and mærens, Gyll., by its shorter and more clavate næ.

PODA LONGIPES, Muls., Op. 12, p. 103.

This species closely resembles O. vittata, from which, however, it is very decidedly in the much longer intermediate joints of its prior tarsi, and also in the larger terminal joint of its antennæ. O. metatarsalis of Thomson (Sk. Col., ix, p. 246) must be very by allied to this species, if not identical with it.

I have seen but a single specimen, which I captured at Aberlady, Edinburgh.

#### CUSA DENTICULATA, sp. n.

Sub-depressa, nigra, antennarum basi pedibusque testaceis, femoribus posticis atis, elytris fusco-testaceis: thorace coleopteris angustiore, transversim convexo, vi-sinuato, angulis posticis fere rectis; abdomine confertissime subtilissimeque ulato.

Long.  $1\frac{1}{3}$ — $1\frac{1}{4}$  lin.

1as abdomine segmento septimo suprà ante apicem tuberculis duobus, apice que spiná laterali introrsum curvatá, dentibusque inter spinas laterales tribus tibus, externis bifidis, insignis.

Antennæ yellowish at the base, pitchy towards the apex, third thinner and rather shorter than the second, joints five to ten transverse. Head not much more than half as broad as the the rather closely and finely punctured. Thorax transversely convex, siderably narrower in front than at the base, not quite twice as the as long, the base on each side sinuate, so that the posterior angles nearly right angles; closely and finely punctured, a little shin elytra yellowish, closely punctured, the punctuation slightly contain that of the thorax; abdomen narrowed towards the apex, all segments very closely and finely punctured. Legs yellowish, the terior thighs a little darker.

This very large *Placusa* is less depressed than most of the o species, and is very remarkable by its male characters. It appears be generally distributed in England and Scotland, but very rare, have found it at the overflowing sap of birch trees, at Hampstead, Rannoch, and in Strathglass.

## OLIGOTA RUFICORNIS, sp. n.

Nigra, antennis pedibusque rufo-testaceis, ano ferrugineo; antennarum artic ultimis tribus abrupte crassioribus; prothorace fortiter transverso, elytris hoc se longioribus.

Long. § lin

Closely allied by the structure of the antennæ, and the colour the legs and antennæ, to O. pusillima; but larger, especially broad with the thorax more transverse, the elytra longer and broader, of and a half times the length of the thorax, and the abdomen a little narrowed towards the apex. Equally closely allied to O. atomaria, but a little larger, and distinguished therefrom by the bright colour of the antennæ and legs, as well as by the broader club of the former. Ver common in the neighbourhood of London, among the refuse of hay-rick

Eccles, Thornhill, Dumfries.

March, 1870.

Additions, &c., to the list of British Coleoptera.

Meligethes brunnicornis, Sturm; Erichs., Ins. Deutschl., iii, p. 184. Determined by M. Ch. Brisout de Barneville as British, on the authority of specimen sent by Mr. Crotch and myself. The species is apparently widely distributed amot uncommon, and may be readily distinguished from M. difficilis by the close punctuation of its elytra and its lighter-coloured antennæ and legs.

M. ochropus, Sturm, Er., must, I think, be erased from our lists. It was introduced by my friend Mr. T. J. Bold (Ent. Mon. Mag., iii, p. 47) upon a specime of M. brunnicornis, as I have satisfied myself by examination; and the insects which I had myself attributed to it with doubt are also to be referred to that species. Mr. Crotch's ochropus, named morosus by M. Brisont, is in my opinion also brunnicornis: it certainly does not agree with the description of morosus.

M. viduatus, St.; Er., l.c., p. 185. Also determined as British by M. Brisout specimens sent by Mr. Crotch and myself. It may be known from M. ularius by its lighter antenne, the more rounded sides of its thorax (which is ely so closely punctured), its more abruptly broadened hinder tibiae, and its r broader anterior tibiae, the apical teeth of which are sharper and longer.

M. pedicularius, (Gyll.?) Er., l.c., p. 186. In the collections of Messrs. Crotch Bold and Dr. Power. Determined by M. Brisout. The anterior tibiæ are very by widened, with the entire outer margin toothed, the denticulations being ger towards the apex, the last but one most prominent.

M. bidens, Brisout, Gren. Cat. et Mat., p. 52. The M. pedicularius of Wat. must be referred to this species. It differs from the pedicularius of Erichson sing rather smaller and narrower, less convex, duller and more finely and by punctured (the punctuation at the base of the elytra being very delicately versely rugulose), and in having its anterior tibiæ much more widened towards pex, which is armed with (usually) only two well defined teeth. This species muon at Mickleham, on Teucrium scorodonia.

M. ovatus, St.; Er., l.c., p. 198. Determined as British by M. Brisout from mens sent by Mr. Crotch and myself. It is very like M. viduatus (though iated with M. flavipes), but of a shorter ovate form, with the thorax more only narrowed in the apical third, and the tibias broader,—the armature of the ior pair being less defined.

M. bidentatus, Brisout, l.c., p. 61. Determined by M. Brisout from two speciin Mr. Crotch's collection. The species is allied to M. erythropus, but is r wider and more convex, with closer punctuation, wider tibiæ, and a bite projecting transverse keel at the extremity of the last abdominal segment of S.

M. ebeninus, Crotch Cat.=lugubris, Sturm.

M. obscurus, Crotch Cat., is now referred by M. Brisont to M. palmatus, Er. nsect is not uncommon at Mickleham, and is, I think, the distinctus of Wat. It does not seem to me to agree precisely with the descriptions of any of species.

M. marrubii, Bris., Crotch Cat., still unique (I believe) as British in Mr. h's collection, is allied to M. serripes, but is larger, with stronger punctuation, ger thorax, and the armature of the anterior tibiæ stronger and less regular.

intend to communicate a further series of types to M. Brisout, and will she the result of his investigation.

Lathridius constrictus, Gyll., Ins. Suec., iv, p. 138. I have a single British men of this curious insect. It is allied to carinatus, but is rather smaller, wer, and of uniformly lighter colour, with the thorax especially longer and wer, and divided as it were into two lobes, of which the anterior is much the r, and very rounded at the sides, with no trace of any angle in front. The pointed club to the antennæ, on which Thomson founded his genus Coninomus traatz, Berl. Ent. Zeit., xiii, p. 129), readily separates these two species from allies. L. constrictus is sunk in De Marseul's Cat. (L'Abeille) as a syn. of tus, Först. (the latter name again appearing by itself at the end of the genus!); recording to Kraatz, l.c., it is carinatus, Gyll., that is identical with Förster's es. Mannerheim attributes L. constrictus to Britain, evidently through his

erroneous attribution of Marsham's ruficollis to it as a synonym. L. rugicollis, hirtus, Schüpp., and rugosus, Hbst., are also erroneously attributed to Britain Mannerheim, apparently through Stephensian blunders (though rugosus has sub quently been found in this country). The same observation applies to Cortica longicornis, Hbst. (not in Wat. Cat. syn.), linearis, Payk., and similata, Schüpp E. C. Rvf. 10, Lower Park Fields, Putney, S.W., April, 1870.

Note on the Heteromerous genus Flatesthes, G. R. Waterh. (Ann. § Mag. M. Hist., 1845, vol. xvi, p. 317).—M. Lacordaire, in his "Genera des Coléoptère Tom. v, p. 215, says that the insect which Mr. Waterhouse describes (silphoid is the same as that described by M. Guérin Ménéville under the name Pradepressa in the Revue Zool., 1841, p. 215. This is, however, a mistake; I hoth insects before me, and they evidently belong to quite distinct species, although to the same genus. The description of Praocis depressa will apply to Plates silphoides in every point, except that in depressa the elytra are said to be a blonger than broad, whilst in P. silphoides they are decidedly longer. The the in silphoides is very nearly as broad as (sometimes broader than) the elytra, disc being very thickly and strongly impressed with almost confluent punctual in depressa the thorax is decidedly narrower that the elytra, the disc be sparingly and not deeply punctured. The elytra in the specimens of depressa the British Museum collection are inclined to fuscous.

The dimensions of the two species are as follows:—P. silphoides, long.  $5\frac{1}{2}$  lat.  $2\frac{1}{3}$  lin.; P. depressa, long.  $5\frac{1}{4}$  lin., lat. 3 lin. Both insects are from S. Patago—Chas. O. Waterhouse, British Museum, March 21st, 1870.

Note on Cleonus sulcirostris.—I took a specimen of this beetle to-day, upo dwarf-willow on the sand-hills here, and note the circumstance, as the insect lin thistles, so that willow would seem an unnatural habitat for it.—E. Koi Curzon, Shortlands, Bridgend, S. Wales; 9th April, 1870.

Early occurrence of Lycana Argiolus.—To-day (exceptionally warm and sur I took a fine ♀of this species. We consider here that last year the season fully a month in advance, as compared with this; yet the earliest date upon wl I then saw Argirlus was April 24th.—Alexander Nash, Hardwicke, Glouces 4th April, 1870.

Note on Saturnia carpini.—One Q of this insect appeared on March 31st, one 3 this day (April 5th). Both had been two years in pupa.—ID.

On the egg-state of Cirradia xerampelina.—At p. 135, vol. iv of Ent. Mag., I have given an account of all I ever had to do with this species, in the of investigating its earlier stages; but, although I cannot say much from my knowledge, I possess a good deal of information about it, given me by late Mr. Edmunds, of Worcester. He claimed to speak from much experienc rearing it, and gave this as the result of his investigations—that he found if the ewere kept at no higher temperature than that prevailing out-doors, the larve we

sh till spring; and he considered the proper food to be the flower buds of ich we all know unfold some considerable time before the leaf buds. With ormation before me, I had no hesitation in placing xerampelina in my list 2; but it certainly seems that the eggs require to be kept in the cold, for very little extra warmth will cause the larva to be developed during the —J. Hellins, Exeter, April 5th, 1870.

epressaria pallorella and Gracilaria populetorum at Witherslack.— Last ber, I met with both these rare species at the above locality; and, as D. la is an Isle of Wight species, and G. populetorum seems to occur chiefly in I thought it might be interesting to record a fresh locality. My friend and has seen both specimens, and to him I am indebted for their names.— ODGKINSON, 15, Spring Bank, Preston, April 10th, 1870.

to on Depressaria Weirella.—I see by the "Annual" the larva of this species be separated from that of applana; it seems curious, but I do not breed plana for a dozen of Weirella; perhaps no one thinks it worth while to e green larvae home, being afraid of being troubled with a lot of such a a species as applana; it was so with me, as I had an idea that Weirella as dark like that of pimpinella, until I saw in Stainton's "Manual" that was green: now I can get plenty of Weirella, but they are very local.—ID.

the on the luminosity of Fulgora.—The luminosity of the tribe Fulgorites at various times been the subject of discussion among entomologists, I would be as well to preserve all reference to the subject in entomological tions, and accordingly reproduce the following notice from the History of by the Abbé Don F. Ignatius Molina, vol. i (1809), page 173:—"The glowthat I have seen were in general similar to those of Italy: but one night, a passing a little wood, I observed three insects, as large as the Death's-head-(Sphinx Atropos), which gave a very bright light. My attempts to take lowever, were fruitless, and I was never afterwards able to discover any of out I am of opinion that they were a species of lantern-fly." Could these have been Fulgora laternaria? their size would lead one to think this b.—Freds. Smith, British Museum; 31st March, 1870.

TOMOLOGICAL SOCIETY OF LONDON, 21st March, 1870. H. W. BATES, Esq., Vice-President, in the Chair.

- . Vaughan exhibited examples of Dianthæcia conspersa found by Mr. Henry in Devonshire. These were remarkable as being varieties which, in some s, approached D. Barrettii, but perfectly distinct therefrom. The Lepidoppresent had no difficulty in separating the two forms, although mixed in ughan's box.
- r. Bond exhibited Psyche betulina, Zeller (=anicanella, Br.), found by Mr. I, at Hampstead.
- c. Smith exhibited an extraordinary larva from Monte Video, completely I with clavate hairs, resembling those of Acronycta alni, but in extreme nce.

Mr. Stainton exhibited Cosmopteryx Lienigiella, bred from English larvæ.

With reference to a query as to whether Argynnis Niobe and Adippe migh be one species, with dimorphic larva, Mr. Stainton mentioned the dimorphic of that of Acherontia Atropos, though not as tending to prove the identity of two species of Argynnis. Mr. Butler was still inclined to believe in the poridentity of the two species, though confessedly he knew nothing of the larvæ. had seen the two forms dallying one with the other in the Alps.

Mr. Kirby communicated "Notes on Butterflies described by Linnæus."

4th April, 1870.—A. R. Wallace, Esq., F.Z.S., President, in the Chair.

H. W. Freeland, Esq., of the Athenaeum Club, was elected a Member.

Mr. A. P. Falcouer sent for exhibition a mole-cricket, found in a boat bet Philæ and Alexandria. This was identified as most probably *Gryllotalpa Coph* De Haan, according to Scudder.

Mr. Jenner Weir (for Mr. Vogan, present as a visitor) called attention to enormous harm done in granaries by weevils. Out of 74 tons of wheat vhoused by Mr. Vogan, 10 cwt. of weevils had been sifted at one time; in 145 tons of maize were stored, and in August, 1869, 6 cwt. of weevils were rated therefrom, and in December, 1869, 29 cwt. more. In both instances depredator was Sitophilus oryzæ.

Mr. Vogan asked for information respecting the earlier stages of the in and if it were probable that it would attack standing or newly-ripe corn. It the general opinion of the meeting that it only infested dry cereals, in whi continued to breed 'in and in.' Mr. McLachlan referred to the fact of ship-bi being extensively attacked by Sitophilus; and in this case the only remedy cons in re-baking. It was urged that, in the case of corn, this process would ut destroy its value.

Mr. Vaughan exhibited a box of bred examples of Dianthæeia carpophaga. Croydon, the specimens shewing very considerable variation in colour.

Mr. Müller remarked that he had received a letter from Mr. Basset Waterbury, U. S. A., confirming his observations as to the odour emitted Cynipida.

Mr. Smith exhibited Masoris respoides of Cresson, and Pterochilus 5-fases of Say, both from the Rocky Mountains.

Mr. Weir exhibited a collection of Argynnis Niobe and Adippe, typical fe and varieties, with a view of proving the perfect specific right of the two spe as opposed to the views held by Mr. Butler.

Mr. Dunning read an extract from the Journal of the Society of Arts, respective spectrum produced by the fire-fly of New Hampshire. This was perfection into traces of lighter or darker lines, extending from a little at Frauenhöfer's line C in the scarlet to about F in the blue, gradually fading at extremities.

Mr. Crotch communicated notes on British species of Dasytida, and exhib British examples of D. plumbeus (Müller), D. aratus (Stephens), and Dolichos protensa (Gené).

# INDEX.

### INDEX TO GENERAL SUBJECTS.

PAGE 259

mal appearances of Lepidoptera, More  habits observed in Ennomos lunaria second brood of Selenia illustraria  lance in 1868 of the winged form of Velia currens  of Pieris rapæ, Great , Thrips, Great , Vanessa cardui in 1868, &c., Great  lia herbariata in London, Occurrence of , Cymatophora ridens and Œcophora Lambdella near Plymouth , Notes on the larva of hinus bilineatus, Note on  as tarsatus taken in Northumberland is saucia at Edgware, Occurrence of , &c., in the New Forest baridæ from Britain, Characters of a new genus and descriptions of ew species of a Quenseli, Schön., Occurrence in Aberdeenshire of; a species new to he British List of Coleoptera diasis betularia, Note on the black variety of formosus, &c., at Lee, Note on  xya fuscula, Gyll, Capture of homoms, Note on the British species of ta occur at Edgware , Lee, Capture of , Lee, Capture , Lee, Capture , Lee, Capture	iata, Notes on the economy of
habits observed in Ennomos lunaria	·
second brood of Selenia illustraria	
dance in 1868 of the winged form of Velia currens	
of Pieris rapæ, Great	
", Vanessa cardui in 1868, &c., Great	
", Vanessa cardui in 1868, &c., Great	Thrips, Great
yeta alni at Derby  ,, Cymatophora ridens and Œcophora Lambdella near Plymouth  11  ,, Notes on the larva of  inius bilineatus, Note on  is tarsatus taken in Northumberland  is saucia at Edgware, Occurrence of  , &c., in the New Forest  tharidæ from Britain, Characters of a new genus and descriptions of  ew species of  a Quenseli, Schön., Occurrence in Aberdeenshire of; a species new to  the British List of Coleoptera  idasis betularia, Note on the black variety of  formosus, &c., at Lee, Note on  xya fuscula, Gyll., Capture of  momus, Note on the British species of  a occurla at Edgware  , Lee, Capture of  , Lee,	
,, Cymatophora ridens and Ecophora Lambdella near Plymouth ,, Notes on the larva of	ariata in London, Occurrence of
minus bilineatus, Note on  as tarsatus taken in Northumberland is saucia at Edgware, Occurrence of  , &c., in the New Forest haridæ from Britain, Characters of a new genus and descriptions of ew species of  a Quenseli, Schön., Occurrence in Aberdeenshire of; a species new to the British List of Coleoptera idasis betularia, Note on the black variety of formosus, &c., at Lee, Note on  xya fuscula, Gyll., Capture of the occurrence in Aberdeenshire of; a species new to alian porcus, Further note on the parasitism of ta occulta at Edgware  , Lee, Capture of , Early breeding of typhila australis, Description of the larva of min Selene, Remarkable variety of ta clavicornis, Fab., Note on  consus will an australis, Description of the larva of the lacucocephala, Note on to calavicornis, Fab., Note on to calavicornis, Fab., Note on the selene and species of Curculionidæ belonging to the Otio-	i at Derby
ainus bilineatus, Note on  18 tarsatus taken in Northumberland  19 tarsatus taken in Northumberland  10 tarsatus taken in Northumberland  11 tarsatus taken in Northumberland  12 tarsatus taken in Northumberland  13 tarsatus taken in Northumberland  14 tarsatus taken in Northumberland  15 tarsatus taken in Northumberland  16 tarsatus from Britain, Characters of a new genus and descriptions of ew species of  18 tarsatus taken in Northumberland  19 tarsatus from Britain, Characters of a new genus and descriptions of ew species of  19 tarsatus from the British of Coleoptera  10 tarsatus fill tarsatus from the black variety of  10 tarsatus fill tarsatus from the British species of  10 tarsatus fill tarsatus from the British species of  10 tarsatus fill tarsatus from the British species of  11 tarsatus fill tarsatus from the British species of  12 tarsatus fill tarsatus from the British species from the British sp	, Cymatophora ridens and Œcophora Lambdella near Plymouth 113
is saucia at Edgware, Occurrence of	, Notes on the larva of
is saucia at Edgware, Occurrence of	lineatus, Note on
, &c., in the New Forest	us taken in Northumberland
haridæ from Britain, Characters of a new genus and descriptions of ew species of	at Edgware, Occurrence of
ew species of	&c., in the New Forest
a Quenseli, Schön., Occurrence in Aberdeenshire of; a species new to the British List of Coleoptera	rom Britain, Characters of a new genus and descriptions of
ne British List of Coleoptera	ies of
idasis betularia, Note on the black variety of formosus, &c., at Lee, Note on	eli, Schön., Occurrence in Aberdeenshire of; a species new to
formosus, &c., at Lee, Note on	sh List of Coleoptera
xya fuscula, Gyll., Capture of	etularia, Note on the black variety of 40
momus, Note on the British species of	s, &c., at Lee, Note on 61
cocera filipendulæ, Note on	
dius porcus, Further note on the parasitism of	
ta occulta at Edgware	
", ", Lee, Capture of	
", , Early breeding of	
phila australis, Description of the larva of	The state of the s
mis Selene, Remarkable variety of	, , ,
ra leucocephala, Note on	
rolepia seneana, New locality for	
ca clavicornis, Fab., Note on	
omus ædilis, A new locality for	
alian genera and species of Curculionidæ belonging to the Otio-	
	· ·
ia puncticollis taken in Northumberland	icollis taken in Northumberland
is inceratus, New localities for	tus, New localities for 61

Bembidium anglicanum, Sharp, Note on
" obliquum at Manchester, Occurrence of
Black variety of Amphidasis betularia, Note on the
Bledius fuscipes, Rye, Note on
, spectabilis, Ktz., Occurrence in Britain of
Blemus longicornis, Sturm, taken in Cumberland
Bombyx quercûs will eat heather, The larva of
Braconidæ belonging to a genus new to Britain, Description of a new species of
British Hemiptera: additions and corrections
Lepidopterists as viewed by a German
Butterflies found near Paris, Notes on
Dutternies found hear I aris, Notes on
Calodera rubens, Er., Occurrence in Britain of
Calopterygina, Diagnoses of 3 new species of
Catoptria aspidiscana, Capture of
Cecidomyia salicina, Schrk., marginemtorquens, Bremi, and salicis, Schrk.,
On the habits of
,, taxi, Inchbald, Observations on
,, urticæ, Perris, On the habits of
Centroptilum, A new genus of the Ephemeridæ, On
Centhorhynchus distinctus, Bris., Observations on
, viduatus, Food-plant of
Charaxes from Africa, Description of a fine new
Chilo phragmitellus, Description of the larva of
Chilosia, Notes on the British species of
Chœrocampa Celerio at Weston-super-Mare
Chrysides parasitic on Odynerus spinipes, On the œconomy of
Chrysopa vulgaris hybernating in a hornets' nest
Cidaria reticulata, Note on
Cirrædia xerampelina, Remarks on, especially with regard to its winter
condition
" On the egg-state of
Cleonus sulcirostris, Note on
Clisiocampa castrensis, Mamestra abjecta, &c., at Gravesend, Notes on .
Coleoptera, Additions, &c., to the List of British 2, 133, 24
" at Folkestone
,, Captures of
" " in Devonshire
Colias Edusa in Lancashire
" " near Manchester
,, Hyale, Note on the young larva of
,, Yellow female of
Coniopteryx psociformis, The sexes of
Corixa flying by night, A
Cossus ligniperda at sugar
Crambus fascolinellus, Captures at Yarmouth, with notes on the earlier stages of
stages of

	iii.
	PAGE
cephalus bipustulatus a good species	229
hora atrata and Tipula flavolineata, Note on	31 16
a? Do birds eat the larvæ of	32
ionidæ, Notes on	95
s habit in a Noctua-larva	96
occurrence of the Wood-leopard	145
ophora ocularis, Xylomyges conspicillaris, &c., near Worcester .	178
dæ, On some British	170
of Benjamin D. Walsh	218
Mr. Abraham Edmunds	42
hila lineata at Folkestone, Capture of	16
" " Lewes	40
" in Gloucestershire	. 16
pia pulchella at Folkestone	141
ved appetite in Lepidopterous larvæ	. 238
ssaria pallorella at Witherslack	285
Weirella, Note on	. 285
necia Barrettii, Note on the occurrence of	. 66
compta and D. Barrettii at Howth	66
rampha new to Britain; D. plumbana, Sc., Occurrence of a	. 66
ra, Two new species of (Scatopse platyscelis and Thripticus bellus,	. 1
oew) inhabiting England	207
dæ, Description of a new species of the Coleopterous family	. 256
cetes alni, Georg	
nirius angustatus, Ahr. (jejunus, Daws.) on the South Coast, Occurrence	01 210
appearance of Eupithecia albipunctata	. 237
breeding of Aplecta occulta	217
ands, Death of Mr. Abraham	. 42
state, A list of British Lepidoptera which hybernate in the	. 221
elesia unifasciata, Life history of	186
mos lunaria, Abnormal habits observed in	. 165
arla musilla Nota on	61
mological Society of London, Proceedings of the . 19, 42, 68, 171, 19, 239, 266, 2	93, <b>219</b> , 85, 286
The	117
Transportana	. 220
,, ,, Haggerstone Newcastle-on-Tyne	266
meridæ, On Centroptilum, a new genus of	. 131
ola (Lycænidæ), Description of a new species of	86
nda lutulenta, Description of the larva of	. 235
ræa silacea, Hbst., Occurrence in Britain of	106
gaster lanestris, Note on	. 16
	60
affinis bred inidæ from Chontales, Nicaragua, Descriptions of new species of	. 226
ithecia albipunctata, Early appearance of	237
, Note on a food-plant of	. 148
Note on a roou-plant of	

Eupithecia consignata bred
" fraxinata at Edinburgh
" helveticata, Note on
,, lariciata, New locality for
Eupœcilia ambiguana, Notes on the earlier stages of
Excursions near Meseritz, in the Prussian Province Posen, Three Lepi-
dopterological
"Faune Gallo-Rhénane" Review
"Fireflies in Kent"
Food of the larvæ of Scoparia and Crambus, Note on the
,, -plant of Lycæna Corydon and Cœnonympha Davus
Fulgora, Note on the luminosity of
Gall-midges, On the examination of living
Gelechia atrella, Haw., Strange pupation of the larva of
Gracilaria populetorum at Witherslack
distribution population in the state of the
Hadena assimilis, Capture of
Hemerobiina, New species, &c., of; with synonymic notes (First Series)
(Second Series)
Hemiptera British-: additions and corrections
" at Folkestone
" Description of a new species of (Nysius Scotti), occurring in
Britain
Britain ,, -Hemiptera-Heteroptera during 1869, Captures of
Britain ,, -Hemiptera-Heteroptera during 1869, Captures of Henestaris laticeps, Curt. Hepialus velleda, Habits of the larva of Heteromera, Descriptions of new genera and species of Heteromerous genus Platesthes, G. R. Waterh., Note on the Hints on preserving larva Homalota, Localities for
Britain ,, -Hemiptera-Heteroptera during 1869, Captures of
Britain ,, -Hemiptera-Heteroptera during 1869, Captures of Henestaris laticeps, Curt. Hepialus velleda, Habits of the larva of Heteromera, Descriptions of new genera and species of Heteromerous genus Platesthes, G. R. Waterh., Note on the Hints on preserving larvae Homalota, Localities for ,, Note on the identity of Spanish and English species of Hopley, The late Edward William John
Britain ,, -Hemiptera-Heteroptera during 1869, Captures of Henestaris laticeps, Curt. Hepialus velleda, Habits of the larva of Heteromera, Descriptions of new genera and species of Heteromerous genus Platesthes, G. R. Waterh., Note on the Hints on preserving larvae Homalota, Localities for ,, Note on the identity of Spanish and English species of Hopley, The late Edward William John Hübner's Works, The date of publication of
Britain ,, -Hemiptera-Heteroptera during 1869, Captures of
Britain ,, -Hemiptera-Heteroptera during 1869, Captures of .  Henestaris laticeps, Curt.  Hepialus velleda, Habits of the larva of .  Heteromera, Descriptions of new genera and species of .  Heteromerous genus Platesthes, G. R. Waterh., Note on the .  Hints on preserving larva .  Homalota, Localities for . ,, Note on the identity of Spanish and English species of .  Hopley, The late Edward William John .  Hübner's Works, The date of publication of .  Hydradephaga, Notes on British; with descriptions of new species of .  Haliplus and Hydroporus .
Britain ,, -Hemiptera-Heteroptera during 1869, Captures of
Britain ,, -Hemiptera-Heteroptera during 1869, Captures of
Britain ,, -Hemiptera-Heteroptera during 1869, Captures of
Britain ,, -Hemiptera-Heteroptera during 1869, Captures of
Britain ,, -Hemiptera-Heteroptera during 1869, Captures of
Britain  " -Hemiptera-Heteroptera during 1869, Captures of
Britain  " -Hemiptera-Heteroptera during 1869, Captures of
Britain  " -Hemiptera-Heteroptera during 1869, Captures of
Britain  " -Hemiptera-Heteroptera during 1869, Captures of

			v.
			AGE
18	cr	mentatus, Capture of	109
		,, Notes on the habits of	138
		Works, Manuscripts and collections, The late Dr. L	17
]	Lep	pidoptera, Additions to the list of	66
		" Corrections in notes on	99
		" in April, 1869	39
_	-5	Acronycta alni, Notes on the	189
te		Aporophila australis, Description of the	13
		Bombyx quercûs will eat heather	117
		Chilo phragmitellus, Description of the	188
		Colias Hyale, Note on the young	232
		Epunda lutulenta, Description of the	235
		Hepialus velleda, Habits of the	41
		Hydrelia unca, Description of the	232
		Hydrocia micacea, Description of the	164
		Hypenodes costæstrigalis, Description of the	216
		Lycena Arion, Note on the	62
		Nephopteryx angustella, Description of the	143
		Noctua Dahlii, Description of the	261
		Peronea rufana, W. V. (autumnana, Hüb.) Note on the	143
		Plusia interrogationis, Description of the	65
		Polia nigrocineta, Life history and description of	64
		Pyralis glaucinalis, On the	111
		Sesia ichneumoniformis, Discovery of the	89
		Thanaos Tages, Description of the	233
0		s pulveralis, Hb., a genus and species of Lepidoptera new to Britain,	
		urrence of	141
		tera, Captures of	192
	-	" at Darlington	170
,	,	" " Folkestone	94
		" " " Glanville's Wootton	146
	,	,, ,, Guestling in 1869	218
	,	,, ,, ,, Witherslack	114
	,	" " Yarmouth	144
	,	,, &c., in 1869	191
	,	" " in Gloucestershire in 1869	191
	,	" " " the New Forest	170
	,	,, ,, Westmoreland	115
	,	" " Worcestershire in 1868	15
,		Description of an undescribed species of Diurnal, from Tropical	
		Africa	278
,	,	" " new species of Diurnal 55, 97, 117, 224,	
,	,	" " " " " from Madagascar	224
,	,	found on the chalk near Norwich, On some	237
,	,	Irish, Addition to the list of	66
۱		Corrections in notes on	96

T *2 1	T 1 1 4 7 1000	PA
	Irish, in April, 1869	.!
"	Morayshire	190,
37	new to the Scottish lists	. 6.2
,,	Note on the development of the larva in the hybernatin ovum in	g 1
3)	Scarcity of, in 1869	. 80
22	observed at light at Norwich, Notes on	13
2)	On some new or recently described species of Diurnal .	. 5
,,	which hybernate in the egg-state, A list of British	2
27	-Rhopalocera, Description of new species of, from Old Calaba	r
and E	cuador	
,,	" ,, two new species of	. 1
33	,, from South America, New	
Lepidopterolo Three	ogical excursions near Meseritz, in the Prussian Province Posen	,
	cription of a new species of	. 1
	ee's-nests	
Britain o	otatus, a genus and species new to our lists, Occurrence in	и
	ranea, Heliothis peltigera and Sterrha sacraria at Neath	٠,
	wich, Notes on Lepidoptera observed at	
	s, Remarks on the habits of	2
	I, A few additions to the Coleopterous Fauna of	•
	•	
•	n, Hints for finding eggs and larvæ of	
22 22		•
23 29 A	Note on the larva of	5
**	iolus, Early occurrence of	
α	varies, On	
	on and Artaxerxes distinct species? Are	
**		
Lythria purp	uraria near York	
Microptinus (	(Nitpus) gonospermi, Note on	3
Monohammus	s sutor, Linn., in Scotland, Capture of	. 1
Morayshire L	Lepidoptera	190, 2
Mordellistena	a brevicauda, Boh., in Britain, Occurrence of	
Mycetophagu	is fulvicollis, Fab., Occurrence in Britain of	1
Myllæna glau	aca, Aubé, Occurrence in Britain of	. 1
Necrophorus	microcephalus, Thoms., Observations on	
Nematus ped	lunculi, Hartig, Notes on	. 1
" sali	iceti, Fallén, Note on the œconomy of	
Nephopteryx	angustella, Description of the larva of	. 1
Neuroptera-p	planipennia, Capture of rare species of	1
New order of	f Hexapod Insects, Notice of a	3
Noctua Dahl	ii, Description of the larva of	. 2
" extr	ema of Hübner, On the	

		vii.
	1	PAGE
aidæ observed in Perthshire and Morayshire in 1869, List of		166
ris verbascella, Notes on the earlier stages of		163
a hispidaria at Hampstead	٠	16
r of Sphinx convolvuli, Note on the		166
erus spinipes, Note on the pairing of		214
hynchinæ, On some new Australian genera and species of Curculionid belonging to the	æ,	99
	107	, 135
sca oppressana at Norwich		190
ng of Odynerus spinipes, Note on the		214
ellé's Monograph of the European Tachyporidæ, Notes on M.	•	209
	1/18	, 171
ites on the Pterophori	150	138
itism of Aphodius porcus, Further note on the	•	230
ity of insects, Note on		40
bicandata of Linné, and P. maxima of Scopoli? What are	٠	265
near rufana, W. V. (autumnana, Hüb.), Note on the larva of		143
ites nouvelles Entomologiques:" Review	•	96
ophthorus rhododactylus and Hylastes obscurus, Note on the habits	of °	6
otoma melitta, Newman=Fenusa betulæ, Zaddach	01 .	213
onomus Julinii, Sahlberg, Note on	•	160
rapæ, Great abundance of		171
tæ, Note on names and food of some species of	•	116
a interrogationis, Description of the larva of	٠	65
Ni, Observations on	•	12
nigrocineta, Life history of, and description of its larva		64
	90	, 117
is globulariæ, &c., at Folkestone		93
idæ, Notes on	•	186
, ,, some of the British species of	•	94
iodes nigricollis, Note on		88
phori, Parasites on the	•	138
phorus hieracii		14
" Strange pupation of a larva of		36
stichus madidus a vegetable-feeder		162
is glaucinalis, On the larva of		111
orth, Two days' collecting at		275
phagus cribratus in quantity, Capture of		259
da scalaris and other Coleoptera at Sherwood Forest, Note on .		60
, Note on		33
mia carpini, Note on		284
pity of insects in 1869		117
" Lepidoptera in 1869, Note on the		191
aria ulmella, Note on		41
Zelleri in South Devon	0	14
tus, Observations on the occonomy of the British species of		126

Selenia illustraria, Abnormal second brood of
Semasia obscurana, a gall inquiline
Sericoris euphorbiana bred
Sesia chrysidiformis bred
" ichneumoniformis, Discovery of the larva of
,, Note on the earlier stages of
" tipuliformis in New Zealand
Sexes of Coniopteryx psociformis, The
" Papilio Merope, The
Skandinaviens Fjädermott of H. D. J. Wallengren, A notice of the . 11
Solenobia pomonæ and Xysmatodoma melanella, Notes on
Sphingidae in Japan
Syrphidæ, List of British
Tachyporidæ, Notes on M. Pandellé's Monograph of the European
Tapinostola elymi at Cleethorpes
Thanaos Tages, Description of the larva of
"The Animal World:" Review
"The Insect World," by Louis Figurer; second edition, revised and cor-
rected by E. W. Janson: Review
The late Dr. L. Imhoff's Works, Manuscripts and Collections "The Lepidopterist's Register:" Review
"The Lepidopterist's Register:" Review Thecla rubi, Notes on the earlier stages of
Thera juniperata near Edinburgh
Thrips, Great abundance of
Thripticus bellus, Correction of an error (p. 2)
Tinea pellionella feeding on cobwebs
Tipula flavolineata and Ctenophora atrata, Note on
Tomicus nigritus, Gyll. and Dryœcetes alni, Georg, Note on the occurrence
in Britain of
Trichius fasciatus in South Wales
Unnatural union
77 1 1 1000 8 6 4 1 3 3 6
Vanessa cardui in 1868, &c., Great abundance of
Variation in Zygæna filipendulæ
Variety of Argynnis Selene, Remarkable
Volta Catifolds, and and an about the wanged form of the voltage of the catifold form of the catifold form of the catifold for the catifold form of the cati
Walsh, Death of Benjamin D
Willow-galls, Queries respecting a few
Xanthia cerago and silago, Comparative notes on the larvæ of
Xylina conformis and Dasycampa rubiginea in Monmouthshire, Occurrence of
" semibrunnea and Agrotis saucia at Dover
Xylomyges conspicillaris at Worcester
,, Captures of
Xysmatodoma melanella, Notes on Solenobia pomonæ and
Yellow female of Colias Hyale
2 cm ii commo or commo regimo e e e e e e e e e e
Zyggana filinendulæ Variation in

# DEX OF SUBJECTS NOTICED IN THE PROCEEDINGS OF THE ENTOMOLOGICAL SOCIETY OF LONDON.

x parallelus, Variety of 25	20
7dium peregrinum in England	40
iversary Meeting	39
hocharis cardamines, Variety of	40
odius said to be vomited by Hottentots 2	20
ynnis Niobe and Adippe	86
2	
	72
hyx Yamai-mai and B. Pernyi	20
	94
	42
	19
	67
	72
", West Africa, new species of 2	67
" ,, Species of Eastern 20, 42,	69
idryas, New species of	00
* * * *	20
	69 20
	42
	40
	94
	94
	94
,, ,, Trebizond	
	20
	94
,, New species of British 172, 2	
	40
	19
mopteryx Lienigiella, Bred specimens of	
,,	69
	.94
1-7	19
lignicola, Odour of	86
ytidæ, Notes on British 2	286
,	94
	286
The state of the s	285
	20
	172
", of Gmelin's "Systema Naturæ"	
rephes, Species of	42
nemeridæ, New British species of 2	220

Fire-fly of New Hampshire, Spectrum of light produced by
Gall on Gnetum, Large
,, Tanacetum vulgare
Galls, Collection of
Gelechia atrella, Larvæ of
Gryllotalpa cophta
Halictus from Cairo, Cells of
Heliothis armigera feeding on tomato
Hispidæ, New genera and species of
Hymenoptera, New species of exotic
Larva, Luminous from Uruguay
,, Snake-like, from New Granada
, with clavate hairs, from Monte Video
Locusts, British species of 24
Lucanoid Coleoptera, Catalogue of 4
Lycana Adonis, Varieties of
Mantispa styriaca, Larva and pupa of
Melöe rugosa
Nepharis alata=Hiketes thoracicus
Neuroptera, Catalogue of British
New Zealand Insects
Oiketicus from Sinai, Case of
Paradoxus osyridellus
Paussidæ, Habits of
Physonota gigantea, Living specimen of
Pison, New species of
Pissodes notatus from Bournemouth
Plusi Ni? British specimen of
Prize Essays
Pselaphidæ, New genera and species of
Pterostichus Prevostii, Monstrous example of
Rhipiphorus, Habits of
Satyrus Semele, Varieties of
Sitophilus oryzæ, Ravages of
Swedish Collections of types
Syrphi, Swarms of
Termes (tenuis?) from St. Helena
Tetracha, Australian species of
Tick on a tortoise, Enormous
Trochilium tipuliforme in New Zealand

PAGE

### SPECIAL INDEX.

PAGE	PAGE
EIOPTERA, o. n	Ceuthorhynchus arcuatus 5
EIOI IEIII, or m	distinctus 229
PSYLLUS, g. n 118	marginatus with 6-
castorinus 119	jointed funiculus
	58, 229
	suturellus (?) Food- plant of 33
COLEOPTERA.	viduatus, ditto 33
a bifasciata, Œconomy of 259	Cionus olens 5
um coarctatum 162	Clonus olens
haris, g. n	Cis vestitus
Readingii 280	Cleoning suicitosoris
as tarsatus85, 231	Coprodera ancorara
hara fumata	antipoduli
fungivora 281	CHaloreds IIII IIIIIII
lata 134	Cupicotinota
a Quenseli 212	cyanella
ena characterized 255	debilis
bipustulata	guttata 80
globulus	latipennis 72
variabilis 255	lebioides 74
	lineolata 74
onomus britannus	megalops 77
Chevrolati87, 232	polygona 72
	relucens 73
conspersus	rutila
incurvus	spinipolitis
rufus	versicolor
ruius	Cryptocephalus bipustulatus a good
odius porcus, Parasitism of 230	species 229
nomus ædilis in a coar pro	querceti at Sherwood 136
dia puncticollis in England 108	Cryptophagus fumatus 257
ous inceratus	serratus near Manches-
nodulosus	ter 136
aninus brassicæ an inquiline 137	Drilus flavescens, 2 59
abidium anglicanum134, 213	Dryœcetes alni
maritimum 133	Dyschirius angustatus at Hayling 213
obliquum in Lancashire 162	Elomosda, g. n
Sturmii in Kent 58	Beltii 275
dius fuscipes	Enochrus characterized
spectabilis 158	Epherina, g. n
mus longicornis in Cumberland 213	longicornis
itobius rugipennis 212	Epuræa longula
	pygmæa 106
odera Bonnairei	100
rubens 229	SHACCA

Ι

L

### COLEOPTERA (continued).

PAG	_
Eros affinis bred 6	
Eurytrachelus niponensis 20	
Exerestus, g. n	•
Jansonii	
	U
Gymnetron beccabungæ and var 3:	3
Gyrinus Suffriani	1
Haliplus striatus 81	
Helochares characterized 254	
Heteromera, Descriptions of new	
Heteromera, Descriptions of new genera and species of 268	3
Hipalmus, g. n 269	)
costatus	
Homalium brevicorne 4	
crassicorne 4	
gracilicorne 4	
Homalota, Localities for 258	
On identity of british and	
spanish species of 230	
montivagans, Woll 230	
notha at Folkestone 59	
obliquepunctata, Woll 230	1
scapularis at Folkestone 59	1
testaceipes near Croydon 258	1
Hydrobius punctatissimus, var 59	
Hydrobius and allied genera 253	1
Hydroporus celatus 83	
derelictus 85	
discretus82, 87, 161	
incognitus84, 162	
melanarius 83	
minutissimus 57	
monticola84, 161	
nigrita82, 161	
obsoletus81, 161	
parallelus84, 162	
tinctus 85	
unistriatus 85	
Hylastes obscurus, Œconomy of7, 59	
daspora, g. n 101	
terrea 101	
lyobates Bonnairei 3	-
athridius assimilis ?	1
constrictus 283	-
limbatus 284	,
201	

	Lathrobium Jansoni			
	Leptinus testaceus in ants' nesta			
	", bees"			
	Lepyrus binotatus			
	Lithocharis vicina			
	Macrodoreas opacus			
	rectus			
	Meligethes bidens			
	bidentatus			
	brunnicornis			
	ebeninus, Crotch Cat			
	fulvipes			
ı	marrubii			
İ	obscurus, Crotch Cat.			
Ì	ochropus			
ı	ovatus			
l	palmatus			
	pedicularius			
	rotundicollis			
	viduatus			
	Microptinus (Nitpus) gonospermi			
	Monohammus sutor in Scotland			
	Mordellistena brevicanda			
	Mycetophagus fulvicollis			
	Myllæna glauca			
	Myllocerus			
	aphthosus			
	aurifex			
	cinerascens			
	decretus			
	glaucinus			
	herbaceus			
	nasutus			
	pudicus			
	rusticus			
	Nautes æneus			
	elegans			
	eximius			
	ovatus			
]	Necrophorus microcephalus			
Ocalea latipennis				
Ochthebius Poweri				
(	tiorhynchus fuscines Walton 10			
	Utiornyhchus fuscines, Walton 10			

Waltoni, Smith ......

COLEOPIERA (continueu).	PAGE	Telmatophilus brevicollis at Hythe	58
a amœna	3	sparg <b>a</b> mii ditto	58
exigua	2	Thyreopterus lutosus	80
ferruginea	3	Titinia, g. n	101
glabriventris		ignara	101
investigatorum		Tomicus autographus	6
longipes	281	nigritus	256
pallidula	3	Trachys troglodytes at Folkestone	59
riparia	3	Trichius fasciatus in S. Wales	60
	0.55	Triplax Lacordairii near Darenth	136
mus characterized	1	Tychius sodalis	257
drus characterized			
ohthorus rhododactylus, Œc	- 1	DIPTERA.	
therates, g. n.			
nigropiceus		Argyra leucocephala	8
, g. n		Cecidomyia marginemtorquens	109
periteloides	100	salicina	
nomus Julinii		salicis	
a denticulata		taxi	61
thes silphoides		urticæ	137
agus nasturtii, Habits of		Chilosia, British species of	203
s depressa		Ctenophora atrata	31
des nigricollis		G	0
tichus madidus a vegetal		Scatopse platyscelis	
eder	162	* *	
	050	Thripticus bellus	2, 34
phagus cribratus, Colony of	259	Tipula flavolineata	31
da scalaris bred	33 60		
us, Habits of british species o		HEMIPTERA-HETEROPTERA.	
ous Erichsoni at Slapton		HEMIPTERA-HETEROPTERA.	,
glossa		Asopus luridus	136
atriceps		Ætorhinus bilineatus	
corticalis		Conostethus griseus	249
dromioides		Coreus hirticornis, common	
fulminans		Corixa alpestris	
pallida		Boldi	
s aceris		cognata	
major at Merton		Sharpi	
pyrenæus		socia	
10		sodalis	
poridæ, Notes on M. Pandel		Wollastoni flying by night	
nonograph of European			
porus scitulus		Enoplops scapha, common	
ela, g. n		Eurygaster maurus, common	
Brownii		Eysarcoris æneus	
oblongopunctata	273	melanocephalus	. 18

HEMIPTERA-HETEROPTERA (continued).	Agrotis pyrophila
Henestaris laticeps	saucia114, 142, 166, 10
Hydrometra odontogaster 9	192, 1
	Amathusia Ottomana
Nysius Scotti 1	Amblyptilus acanthodactylus
Sehirus dubius	cosmodactylus
Sigara minutissima 9	Amphidasis betularia
Stenocephalus agilis at Folkestone 183	Anthrocera filipendulæ 1
	Aplecta occulta114, 141, 142, 16
Stethotropis, g. n	
incana 242	Aporophila australis, Larva of
Velia currens, winged 10	Argynnis Selene
999	Argyrolepia æneana
Zicrona cærulea, abundant 232	sub-baumanniana
	Asychna profugella
HEMIPTERA-HOMOPTERA.	
100	Bombyx callunæ
Asiraca clavicornis 162	quercûs
Iassus cruentatus109, 138	Camptogramma fluviata1
	Catoptria aspidiscana
	expallidana
HYMENOPTERA.	
Brachymeria flavipes 183	Chœrocampa Celerio
	Charaxes Cinadon
Chrysis bidentata, Habits of 154	Zelica
neglecta ditto 154	Chilo phragmitellus, Larva of
Cynipidæ, Notes on british 178	Cidaria reticulata
Fenusa betulæ 213	Cirrædia xerampelina193, 2
Nematus pedunculi	Clisiocampa castrensis
	Cœnonympha Davus
saliceti 29	Colias Edusa1
Odynerus spinipes, Pairing of 214	Hyale 111, 170, 2
D 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Cnæmidophorus rhododactylus
Pambolus melanocephalus	Cossus ligniperda
Phyllotoma melitta 213	Crambus fascelinellus
	latistrius
LEPIDOPTERA.	Cymatophora ocularis1
Acherontia Atropos191, 192, 218	Danais Nossima
Acidalia herbariata	Danais Nossima
	, , ,
inornata 191	Deilephila lineata
Aciptilus tetradactylus	Deiopeia pulchella
Acosmetia caliginosa	Depressaria discipunctella
Acronycta alni	granulosella
myricæ168, 215	pallorella
Agrotis agathina 168	Weirella
cursoria145, 168, 215	Dianthœcia Barrettii
lunigera 168	compta

LEPIDOPTERA (continued).	F	AGE
mpha plumbana 66	Ithomia Variua	
00 193	Junonia Anteva	225
	Westermanni	278
ta serricornis	Leioptilus scarodactylus	150
esia unifasciata, Larva of 186	Lemiodes pulveralis	
os erosaria	Leptalis Deione	
fuscantaria192, 236	Leucania extranea	
orbicularia	littoralis	
Teresa	Limnas (?) Bryaxis	
a lutulenta, Larva of 235	Liparis salicis	
Neria 98	Lithosia caniola	
Vohemara	Lycæna Arion	
ecia albipunctata143, 192, 237	Argiolus	
consignata bred 17	Artaxerxes62	
fraxinata142, 192, 236	Corydon	
helveticata117, 217	Medon	
lariciata	Lythria purpuraria	
ilia ambiguana		
chia Fetna	Mamestra abjecta	
Gulnarè	Mechanitis Mamercus	
Jaresia	Mesene Xypete	
Labè	Mimæseoptilus mictodactylus	
Maimounè 251	paludicola	
muscosa	Mixodia Ratzeburghiana	170
Oreba	Nemoria viridata	170
ona Elmira	Nephopteryx angustella	
Labiena 226	Noctua conflua	
hene Elpinice 97	Dahlii	
	extrema	
maculiferella 237	Nola strigula	
rhombella 170	Nothris verbascella	
	Nymphidium Lilina	
umbrosella	Nyssia hispidaria	
aria populetorum		
	Odontia dentalis192	
na assimilis 66	Œcophora Lambdella	
this armigera 192	Oidematophorus lithodactylus	
marginata 190	Opsiphanes Orgetorix	
peltigera 141	Oxyptilus lætus36	, 122
dus velleda	Pædisca oppressana	100
eosoma nebulella 237	Papilio Juda	
ecia micacea, Larva of 164	Kerosa	
elia unca, Larva of	Lalandii	
illa palustris	Merope 148	
enodes costæstrigalis, Larva of 216	-	
nuces costassingans, narva on 210	Zanoa	90

xvi.

TEPTDOPTERA (continued).	201 20 20 20
Peronea autumnana	Thanaos Tages, Larva of
rufana 143	Thecla betulæ
Phibalapteryx lapidata	pruni
Phlogophora empyrea	rubi
Phycis subornatella	Thera juniperata1
Pieris Mananhari	Tinea pellionella
rapæ	semifulvella
	Tryphæna subsequa
Platyptilus farfarellus	
Zetterstedtii	Vanessa Atalanta, Variety of
Plusia interrogationis65, 169	cardui
Ni	Xanthia cerago, Larva of
Polia nigrocineta64, 90, 117	silago, Larva of
Procris globularize 93	Xylina conformis
Pronophila Alusana 98	
Tena	semibrunnea1
Psyche anicanella94, 186	Xylomyges conspicillaris
crassiorella 186	Xysmatodoma melanella
intermediella	Zelleria hepariella
salicicolella 94	Zenzera æsculi
Pterophorus hieracii	Zygæna filipendulæ1
monodactylus 149	Ligora Imperiority
teucrii	
Pyralis glaucinalis, Larva of 111	NEUROPTERA (in the Linnean
G	Apochrysa beata
Saturnia carpini	
Scoparia ulmella	Centroptilum, g. n
Zelleri 14	Chrysopa exul
Selenia illustraria190, 217	mozambica
lunaria 165	punctinervis
Semasia obscurana	tenella
Sericoris euphorbiana bred 16	Climacia, g. n
Sesia chrysidiformis93, 94	Coniopteryx psociformis, Sexes of
ichneumoniformis, Larva of89, 90	Drepanepteryx berothoides
tipuliformis 146	falculoides
Solenobia pomonæ 91	faiculoides
Sphinz convolvuli 166	Enoicyla pusilla
Steganoptycha neglectana 49	
Steropes Paniscus 193	Hemerobius concinnus
Sterrha sacraria 141	decisus
Stilbia anomala169, 215, 216	inconspicuus
Symmachia Leena	perparvus
Threissa 227	pini
	setosulus
Tapinostola Bondii	tasmaniæ
elymi 95	Hyposmylus, g. n
extrema 34	punctipennis

	xvii,
NEUROPTERA (continued)           ema, g. n.         27           hrysa capitata         139           evanescens         25           ferruginea         26           us inquinatus         200           interlineatus         199           Langii         197           lineatocollis         196	Osmylus multiguttatus         PAGE 195           pubicosta.         198           Perla bicaudata and P. maxima         265           Sapho orichalcea         27           Thore beata.         28           Victoria.         28           Varnia perloides.         26
INDEX TO C	ONTRIBUTORS.
PAGE	PAGE
. н 238	Dembski, E
	D'Orville, H 16
G41, 142	Doubleday, Henry90, 91, 111
c, C. G 37, 113, 144, 163, 236,	Douglas, J. W10, 89, 162, 241
273, 275	Downing, J. W
Frederick 268	E . D . L E D . 121
H. W., F.Z.S	Eaton, Rev. A. E., B.A
I, Edwin 67	Edmunds, Abraham15, 41
F. Alfred 86	Fereday, R. W 146
ield, Rev. E. N., M.A 218	Fletcher, J. E61, 145
C. J108, 138, 161, 162, 171, 213, 231	
T. H 141	Gorham, Rev. H. S
r, William 13, 38, 65, 90, 91, 111,	Greene, Rev. J., M.A165, 190, 217
3, 164, 188, 190, 233, 235, 261, 262	Gregson, C. S64, 66, 115, 116, 265
A. G., F.L.S., &c28, 55, 148,	Groser, W. H
171, 250	Harding, G., Jun 91
	Hardy, J. Kay 60
pell, Charles 237	Hardy, J. R
gton, T. J40, 66, 96	Hellins, Rev. J., M.A166, 186, 217, 221,
sion, G. C61, 136, 231, 232, 257	232, 238, 264, 284

Hewitson, W. C., F.L.S. ...68, 86, 96, 97,

Hislop, Robert ......33, 108, 212

Hodgkinson, J. B. ......41, 95, 115, 285

Jagger, W. .....117, 193

Jenner, J. H. A......40, 192

Jenner-Fust, H. J., M.A. ...... 217

Jordan, R. C. R., M.D. ...14, 40, 119, 138,

Horton, Rev. E., M.A. .....

177, 226

man, Thomas .....

pell, J.....

, Nicholas .....

e, Rev. H. Harpur, M.A. .. .....

ls, N. J. .....

man, T. Algernon, M.D. ...6, 31, 95, 126, 153, 214, 230, 259

e, Benjamin ...... 109

m, A. C. .....114, 142

J. E. & H. R...... 170

C. W...... 146

41

PAGE	
Kidd, H, W 8	Sang, J
Kirby, W. F	Saunders, Edward, F.L.S
Knaggs, H. G., M.D., F.L.S66, 166	Scott, John
Koper-Curzon, E 284	Scott, J. F
	Sharp, David, M.B81, 107, 18
Llewelyn, J. T. D., M.A., F.L.S60, 141	230, 253, 2
Lewis, George	Smith, Rev. B
Lewis, W. Arnold 142	Smith, Frederick134, 1
Longstaff, G. B143, 214	Stainton, H. T., F.R.S., &c
AF T 11 TO TIT C OI ON OO OI 10F	Steele, J
McLachlan, R., F.L.S21, 27, 33, 61, 195, 213, 238, 265	
McNab, W. R., M.D 87	Taylor, J. Kidson
Marsden, Herbert39, 66, 191	Thorpe, J
	Todd, Rev. E. Hallett, M.A
Marsh, H	Tylden, Rev. W., M.A
Marshall, Rev. T. A., M.A178, 228	
Mathew, Rev. M. A., M.A	Ullyett, H
Meek, E. G14, 66, 89, 95, 141	
Miller, Charles 114	Vaughan, Howard
Mitford, Robert94, 186	Verrall, G. H
Moncreaff, H 213	
Morley, T 162	Ward, Christopher
Müller, Albert17, 29, 61, 95, 109, 137,	Waterhouse, C. O 2
184, 185	Waterhouse, E. A
Murray, Rev. R. P., M.A	Westwood, Prof. J. O., M.A., F.L.S
Nash, Rev. A., B.A., 284	White, E
Norman, George166, 217	White, F. Buchanan, M.D9, 1
	7777
Pascoe, F. P., F.L.S 99	Wilson, Andrew
Porritt, G. T117, 191	Wollaston, T. V., M.A., F.L.S
Pryer, H. 201	Wormald, P. C.
Ragonot, E. L	7-11 D ( D ( ) 10 11 16
Rye, E. C2, 58, 86, 87, 88, 106, 107,	Zeller, Prof. P. C10, 11, 12
159, 160, 182, 183, 209, 229, 256, 257, 282	1

# IST OF NEW GENERA AND SPECIES, &c., DESCRIBED IN THIS VOLUME.

	PAUL
ER. DHRMIOPTERA, Westwood	118
US.	. 118
CIES. latypsyllus castorinus, Westwood (Canada)=P. castoris, Ritsema	119
COLEOPTERA.	
NERA.	279
COTOCHARIS, Sharp	273
E Date	
Epherina, Pascoe	268
EVERESTUS. F. Bates	269
Transfer varie	101
The same and the s	
DASFORA, Pascoe	100
	272
TARPELA, F. Bates	101
TITINIA, Pascoe	
PECIES.	280
The state of the s	
Aleochara fungivora, ,, (Scotland)	
A server variabilis (Britain)	134, 213
21	
Cartadana managrufa H. W. Bates (Upper and Lower Amazons)	
-balaitag (Upper Amasons)	=0
cupreotincta, ,,	
cyanella, ,, (New Guinea)	76
cyanella, " (Test amazons)=nitidula, Buq debilis, " (Upper Amazons)=nitidula, Buq	72
debilis, " (eff. "	74
lehioides, "	74
megalops, ,, (Upper Amazons)	72
polygona, ,, ,,	m o
relucens, ,, ,,	
rutila, ", acutipeni	nis, Buq. 78
spinipennis, ,, (Upp. & Low. Amazons) — actuspent	76
	27
Elomosda Beltii, F. Bates (Managary)  Epherina longicornis, Pasc. (Champion Bay)	

Exerestus Jansonii, F. Bates (Nicaragua) 2
Haliplus striatus, Sharp (Scotland)
Hydroporus incognitus, " (Britain)
monticola, ,, (Scotland and Wales)
parallelus, ,, (Scotland)
Idaspora terrea, Pasc. (Gawler)
Macrodorcas opacus, C. O. Waterhouse (Hakodadi) 2
Myllocerus aphthosus, Pasc. (Cape York) 1
aurifex, ,, (W. Austr.)
cinerascens, ,, ,, 1
decretus, ,, (Champion Bay) 1
glaucinus, ,, ,, 1
herbaceus, ,, ,,
nasutus, ,, (W. Austr.) 1
pudicus, ,, (Nicol Bay)
rusticus, " (Champion Bay) 1
Nautes æneus, F. Bates (Nicaragua) 2
elegans, ,, (no locality) 2
eximius, " (Nicaragua) 2
ovatus, " (Colombia) 2
Ocalea latipennis, Sharp (Scotland)
Ochthebius Poweri, Rye (England)
Oligota ruficornis, Sharp (England)
Phlæotherates nigropiceus, H. W. Bates (Amazons)
Phlyda periteloides, Pasc. (Adelaide) 1
Placusa denticulata, Sharp (Britain) 2
Stenoglossa atriceps, H. W. Bates (Ega, Rio) = transversa, Reiche
dromioides, ,, (Amazons, Bahia)
fulminans, ,, (Bahia)
pallida, ,, (Ega)=nigrostriata, Reiche
Tarpela Brownii, F. Bates (Nicaragua) 2
oblongopunctata, " (Mexico)
Titinia ignara, Pasc. (Melbourne)
HEMIPTERA-HETEROPTERA.
GENUS.
STETHOTROPIS, Douglas & Scott
SPECIES.
Conostethus griseus, D. & S. (England)
Corixa alpestris, ,, (Scotland)
Boldi, ,, (Northumberland)
cognata, " (Scotland)
socia, " "
sodalis, ,, (Northumberland)
Nysius Scotti, E. Seunders (England)
Stethotropis incana, D. & S. "

### HYMENOPTERA.

CIES. P	AGE
	228
LEPIDOPTERA.	
CIES.	
mathusia Ottomana, Butler (Sarawak)	55
haraxes Cinadon, Hewitson (Natal)	177
Zelica, Butler (West Africa)	28
anais Nossima, Ward (Madagascar)	225
pitola Teresa, Hewits. (Africa)	86
resia Neria, Hewits. (Ecuador)	98
ronia Vohemara, Ward (Madagascar)	224
aptychia Fetna, Butler (San Geronimo)	250
Gulnarè, " (Panama)	<b>2</b> 50
Labè, ,, (Veragua)	250
Maimound, ,, (U. Amazons)	251
urygona Elmira, Hewits. (Nicaragua)	226
Labiena, ,, ,,	226
uryphene Elpinice, " (Old Calabar)	97
homia Varina, ,, (Ecuador)	97
monia Anteva, Ward (Madagascar)	225
Westermanni, Westwood (Guinea)	278
eptalis Deione, Hewits. (Nicaragua)	68
imnas (?) Bryaxis, ,, ,,	227
echanitis Mamercus, ,, (Ecuador)	97
esene Xypete, ,, (Nicaragua)	227
ymphidium Lilina, Butler (Mexico)	252
psiphanes Orgetorix, Hewits. (Nicaragua)	177
apilio Juda, Butler (Sarawak)	56
Kerosa, ,, ,,	55
Zanoa, ,, ,,	56
ieris Mananhari, Ward (Madagascar)	224
ronophila Alusana, Hewits. (Ecuador)	98
Tena, ,, ,,	98
ymmachia Leena, " (Nicaragua)	226
Threissa, ,, ,,	227

G

SI

NEUROPTERA (in the Linnman sense).
GENERA.
Centroptilum, Eaton
CLIMACIA, McLachlan
Hyposmylus, "
Neuronema, ,,
,,
SPECIES.
Chrysopa exul,
nigra,, " " " " " " " " " " " " " " "
punctinervis, "(Texas)
Drepanepteryx berothoides, ,,(Australia)
Hemerobius perparvus, ,(Texas)
Nothochrysa evanescens, ,,(Sarawak)
ferruginea, " " " " "
Osmylus inquinatus, ,, (Ceram)
Interlineatus, ,(Natal?)
Langii,, "(Northern India)
lineatocollis, ,, ,,
multiguttatus,, (Trebizond)
Sapho orichalcea, " " (West Africa)
Thore beata, (U. Amazons)
Victoria,, " (Bolivia)
AND THE CASE OF THE PROPERTY O
ADDITIONS TO THE BRITISH INSECT FAUNA BROUG
FORWARD IN THIS VOLUME.
COLEOPTERA. Bagons inceratus, Gull.

ENERA. P	AGE		
Actocharis, Sharp	279		
ANACENA, Thoms	255		
LEPYRUS, Germ	86		
PECIES.			
Actocharis Readingii, Shp	280		
Agabus tarsatus, Zett85,	231		
Aleochara fungivora, Shp			
Amara Quenseli, Schön 212			
Anacæna bipustulata, Steph 256			
variabilis, Shp	255		
Anthonomus britannus, Des Loges	87		
Chevrolati, ,, 87,	232		
conspersus, ,,	88		
(?) incurvus, Panz	88		
(?) rufus, Schön			

nodulosus "
Bembidium anglicanum, Sharp, 13
Bledius spectabilis, Ktz
Calodera rubens, Er
Ceuthorhynchus arcuatus, Hbst
distinctus, Bris
Cionus olens, Fab
Cis vestitus, Mellié
Cryptophagus fumatus, Gyll
Epuræa longula, Er
silacea, Hbst
Gyrinus Suffriani, Scriba
-
Hydroporus discretus, Frm82, 8
incognitus, Sharp84
Haliplus striatus, Sharp

minutissimus, Germ ..

	AAIII.
	PAGE
COLEOPTERA (continued).	Chrysogaster Macquarti, Lw 176
roporus monticola, Sharp 84, 161	Chrysotoxum vernale, ,, 176
obsoletus, Aubé81, 161	Helophilus nigrotarsatus, Schin 175
parallelus, Sharp 84, 162	Merodon equestris, Fab
unistriatus, Schr 85	Pipiza vana, Zett 176
nridius constrictus, Gyll 283	Pipizella Heringii, "
aridius constrictus, ogti	Platychirus immarginatus " 174
yrus binotatus, Fab	Scatopse platyscelis, Lw 2
bidentatus, Bris 283	Sphærophoria dispar, "
brunnicornis, Sturm 282	Syrphus diaphanus, Zett
	Thripticus bellus, Lw
fulvipes, <i>Bris.</i> 257	
ovatus, Sturm 283	HEMIPTERA-HETEROPTERA.
rotundicollis, Bris 257	GENUS.
viduatus, Sturm 283	Stethotropis, Douglas & Scott 241
rdellistena brevicauda, Boh 86	
cetophagus fulvicollis, Fab 107	SPECIES. Conostethus griseus, D. & S 242
llæna glauca, Aubé	Corixa alpestris, ,, 249
alea latipennis, Shp 280	Boldi, ,, 245
hthebius Poweri, Rye 4	cognata, ,, 246
gota ruficornis, Shp 282	socia, ,, 243
ypoda investigatorum, Ktz 2	sodalis, ,, 245
longipes, Muls	Nysius Scotti, E. Saunders 1
acusa denticulata, Shp 281	Stethotropis incana, D. & S 242
micus autographus, Ratz 6	
nigritus, Gyll 256	HYMENOPTERA.
	GENUS. PAMBOLUS, Haliday 228
DIPTERA.	SPECIES. Pambolus melanocephalus, Marshall 228
174 204	Pambolus melanocephalus, Marshare 220
osia barbata, <i>Loew</i> 174, 204 decidua, <i>Egg</i> 174, 206	LEPIDOPTERA.
impressa, Lw174, 204	
intonsa, ,,	GENUS.  Lemiodes, Guenée
pigra, ,,	
præcox, Zett	SPECIES.  Dicrorhampha plumbana, Scop 60
pubera, ,,	Lemiodes pulveralis, Hb 14
pubera, ,,	Descho anicanella Bruand (Epich-
soror, ,,	
sparsa, Lw174, 207	
D 13.37	TEWS.
he Insect World."-L. Figuier, Ed. 2	
he Lepidonterists' Register"	4
TIO TICKING PROPERTY TO PARTY	

etites Nouvelles Entomologiques."—E. Deyrolle .....

96

## EXPLANATION OF PLATES.

Plate 1.—Fig. 1, Euptychia Fetna,Butler.
2, Labè,,
3, Gulnarè, ,,
4, Maimounè, ,,
5, Jaresia,,
6, muscosa, ,,
7, Oreba, ,,
8, Nymphidium Lilina,,
Plate 2.—Fig. 1, Exerestus Jansonii, F. Bates
1a, head of do., seen from front.
2, Hipalmus costatus, Guérin
3, Elomosda Beltii, 8, F. Bates
4, Tarpela Brownii, F. Bates
WOOD-CUTS.
Actocharis Readingii, Maxilla and labium of
Anacæna globulus, Maxilla and labium of Asiraca clavicornis and details
Climacia arcolaria Antonian -i
Enochrus bicolor, Maxilla and labium of
Enherina longicornia Hood and towns of
Helochares lividus Mavilla and labinaries
Hydrobius fuscipes, Maxilla and labium of
Idaspora terrea. Head and funianlys of settings of
Idaspora terrea, Head and funiculus of antenna of
Philhydrus melanocephalus, Maxilla and labium of
Phlyda periteloides, Head and funiculus of antenna of
Sthethotropis incana, Details of
Titinia ignara, Head and funiculus of antenna of
o and the date of antenna of
ERRATA.
Page 2, line 20, between "veins" and "totally," insert "almost perfectly parall
,, 31, ,, 31, for "fuciformis" read "ruficornis." [sixt]
" 59, " 8, " "the," " "thin"
,, 67, ,, 4, ,, "Dallymount," ,, "Dollymount."
33 ((Armamoa)) ((A. ))
68 24 "Degrap" "Degrap"
27 (College 1- " DEIONE.
83. 15 "dayle" "COLL"
010
" " " " " " " " " " " " " " " " " " "
, 224, ,, 30, invert the ♂ and ♀ signs; and in last line, dele ♀.
,, 225, line 18, for the first \( \varphi\), read \( \delta\); and in line 29, dele \( \varphi\).
in in the state of
" " " 20, " " margipellens," " " margipallens."  " 256, " 7. " BIPUSTULATUS" " " BIPUSTULATU."
read "la
[joint of maxillary palpi broadly securiform







